PRACTICAL FINGERING

FOR THE

BANJO.

THE MODERN, SCIENTIFIC SYSTEM OF FINGERING,
INTENDED FOR THE USE OF TEACHERS AND ADVANCED PUPILS.

BY

GEO. W. GREGORY.

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BRIEF SKETCH OF THE AUTHOR.

GEORGE W. GREGORY comes of a musical family, all of whom have been well known in years past. He is the son of the late Dudley S. Gregory, at one time President of the New York Philharmonic and connected with numerous other musical organizations. As an amateur musician, his mother ranked among the best, possessing a soprano voice of remarkable brilliancy and being a pianiste as well. Mr. Gregory, as a youth, gave evidences of great musical talent, which gift has been developed to the extent, that to-day he stands at the head of his profession, with not only a local reputation, but foreign as well. To his credit it may be said that he has attained this position through his own efforts alone, being entirely self-taught.

With the same spirit of enterprise and perseverence which has characterized all of Mr. Gregory's movements in life, after having received a liberal education, he went to New Mexico, where he became a "cow boy." It was there he began the serious study of music, and spent the long winter nights working out examples in thorough-bass by the flickering light of the camp-fire, and practiced the banjo while coyotes howled a dismal obligato.

After seven years of ranch life and study combined, he returned to the east to take up the teaching of thorough-bass as a profession, and to continue his study of the banjo.

His theory has been, that the Banjo should be studied and practiced in the same manner as any other musical instrument, and to the development of this aim, he has devoted his whole energy. He has entirely revolutionized the manner of fingering, making it much more simple, and more graceful as well. This method he has adopted from the most approved violin, piano, and guitar theories. The practical result of his theories is shown in his own masterly playing, and the proficiency of his pupils. He has opened wide the field for the possibilities of the banjo, and has done much to overcome the existing prejudice against it.

His knowledge of thorough-bass and harmony has enabled him to arrange concerted music, which his trio, known as "The Gregory Trio," is a specimen, as well as to play with great effect—really wonderful to hear.

Coming from such a source, it is with the utmost confidence that we offer this work to the public.

PRACTICAL FINGERING FOR THE BANJO.

By GEORGE W. GREGORY.

INTRODUCTION.

When we consider the banjo as a musical instrument in the position it occupies to day, and attained in so short a time as compared to the growth of other instruments, its extraordinary advancement up to the present time is more to be wondered at than are its short comings. The banjo, starting as it did in disrepute, because of its early associations, handicapped by an impractical style of fingering, surrounded by prejudices, and worst of all, championed in great part by unmusical and illiterate people, who took to it readily because of its apparent simplicity, is now recognized by the most skeptical musicians and acknowledged throughout the world as a thoroughly musical instrument.

Stewart has overcome its former mechanical and acoustical defects; adaptations of the works of the great masters can be found in any music store, and especially arranged books on harmony and orchestration are now making their appearance; but it is still in its infancy and bears promise of greater possibilities than have as yet been demonstrated. Every opportunity is offered to develop this unexplored field and establish the banjo as the equal of any other stringed instrument, but there is one obstacle which will bar the way to further progression so long as it is countenanced—and that is the system of fingering almost universally accepted to-day. A mere superficial study of the theories advanced for the fingering of the older instruments, in which the same fundamental principals can be traced throughout, would convince any one of the truth of this.

Of what benefit are all the fine points of a carefully constructed instrument, if we have not the ability to make them manifest? Of what service the adaptations of the classics, if the manipulation of the more difficult passages is beyond us? And of what avail works on modulation, etc., if to write examples within the capacity of the player the chords themselves must be so turned and twisted that the intended progressions are entirely obliterated?

Now, when we consider that this is the actual situation at the present time, can the importance of sound theory in fingering be over-estimated? Surely it is the one thing which will extend the possibilities of the instrument and increase the facility of the performer!

Some of the more recent methods have advocated new and avowedly advanced theories for the bettering of right-hand fingering, but much of the same primitive method for the left hand still exists that was in use years ago, and should have passed into oblivion hand in hand with the earlier banjo music, (?) now obsolete, with which it may be associated. There is certainly much room for improvement and the only question that arises is—upon what lines can it be accomplished most successfully.

It was with this query in view that the methods of the older instruments were carefully studied and analyzed; not for the purpose of adopting without modification, the system employed on any other instrument, (a common error committed by some compilers; *i.e.* in left-hand fingering), but to eliminate such facts as appertained to construction of method alone, and on *these lines* build up a theory particularly suited to the characteristics of the banjo itself. It proved a difficult subject to cope with, and one upon which the author spent years of study in bringing to what *he* considers a state of perfection, and while he feels convinced after much experience, both in teaching and playing, that his system is not only sound in theory but practical as well, he does not hold "I say" equivalent to *Q. E. D.*, but submits the fruits of his labor to the judgment and criticism of the banjo public and will abide by their decision.

NOTE.—The author does not approve of self-instruction, either with or without the aid of a "method," being convinced that the faulty habits so easily cultivated and hard to eradicate, oft-times acquired through this system of learning, will invariably prejudice the student against the ultimate proper use of the hands or fingers, which to him or her will seem unnecessarily difficult by comparison with that which has been adopted and facilitated through practice. Hence, in writing this work the aim has not been to produce a "self instructor," but rather to explicate in a concise and comprehensive manner a practical system of fingering and a substantial theory for scales and arpeggios reduced to formulas for the use of teachers or advanced pupils particularly, dealing with the elementary principles of music only where necessity demands the correction of certain prevalent errors.

The study of the older instruments aforementioned, brought forth one predominant fact; that the very basis of science in fingering rests upon two fundamental principles. First: The use of the muscles in the most natural and effective manner, and Second: The equal division of the work to be accomplished, between the fingers employed. The latter we will term "Division of effort."

The subject of the correct usage of the muscles will be very briefly dealt with, but as a thorough discussion of this branch would fill a volume in itself and does not come within our scope, the author has reserved a fuller dissertation for another work, now under way: "Technical Studies and Foundation Exercises for the Banjo."

The other principle, the "Division of Effort," forms the mainspring of this work and will be treated at length.

POSITION.

Correct position is as necessary to good technic, as scientific fingering is to rapid execution, and, as the former is essential to the latter, a word on this subject cannot be remiss.

Few professionals and fewer amateurs appreciate the importance of a studied position of the wrist, although a moment's consideration of the anatomy of the muscles used in playing, would be sufficient to convince any one that a cramped position of the wrist will necessarily constrain the action of the fingers.

We all know that in picking the strings with the fingers of the right hand, or when closing the fingers of the left hand on the frets, the flexor muscles, (those on the inside of the arm) are used, and that to open the hand or "recover," after picking a string, the extensor muscles, (those on the outside of the arm) are brought into play; and further, that the chords or sinews only of the muscles governing the action of the fingers are actually situated in the hands, and that passing the wrist and extending up the

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arm they connect with the muscles proper, attached at the elbow; hence the importance of avoiding a position that will interfere with the action of these chords (such as the bending of the wrist in an unnatural manner), and the necessity of cultivating one in which the wrist will be as nearly straight as expedient. While arching the left wrist slightly outward adds to the strength of the touch by bringing greater pressure on the finger tips, good judgment must be exercised, and, as in all other things, extremes guarded against.

As an example illustrative of the effect the position of the wrist has upon the use of the fingers, bend the wrist at a right angle with the arm; thus:—

[Wrist bent at a right angle with the arm.]

work the fingers as in playing and the action will be stiff and tedious. Then straighten the wrist; thus:—

[Straight wrist.]

and repeat the same performance with the fingers, and their increased flexibility will be apparent. All things are relative, and this constraint is exercised to a greater or lesser degree as the wrist is more or less crooked.

Of equal importance with the position of the *wrist* is the position of the *instrument.*

How many there are who, in spite of all advancement, still insist upon holding the banjo as closely to the body as possible, when the simplest test will demonstrate that a large percentage of the tone is lost—smothered in this way; and again, how many we see who hold the banjo neck so near the shoulder and high in the air, that viewing the frets involves a position of the head both trying to the performer and awkward to behold. Glance at the following cut taken from the "old-time" method, illustrating the faults still prevalent, just described:

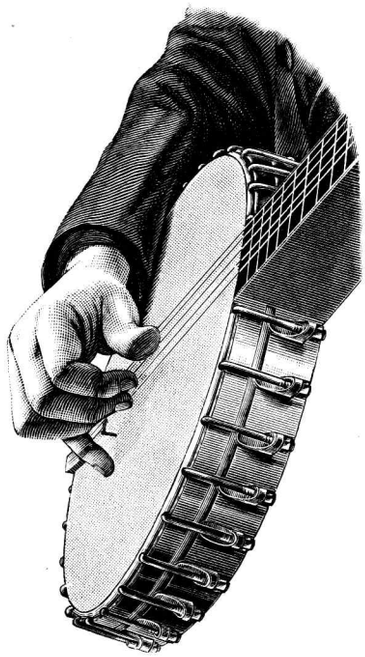
["Old Time" position. INCORRECT.]

and then study closely the next cut:—

[Modern position. CORRECT.]

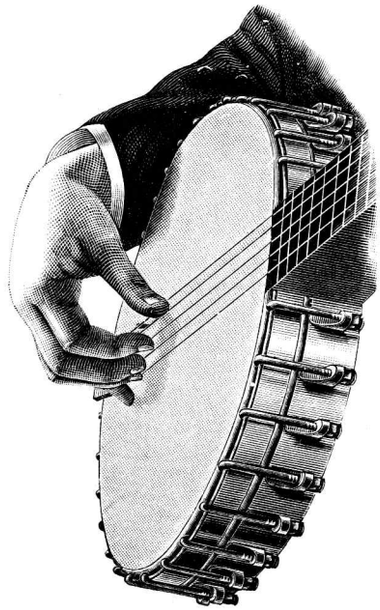
the modern and strictly practical position. In the latter we have every essential to good form. The banjo rests on the thigh in such a manner that with the right wrist on the rim, and the fingers over the strings in readiness for picking, it balances without the aid of any support from the left hand—the latter remaining free to shift from one end of the fingerboard to the other.

The neck of the banjo being held so far in front has manifold advantages: the performer can look straight ahead (or very nearly so) and still see the fingerboard. By this method the difficulty experienced through the awkward and tiresome movement of the head in looking back and forth from the upper frets so near the shoulder, to the music rack in front, and necessitated by the "old-time" position, is obviated by bringing the music-rack and fingerboard within the same line of vision. This enables the modern banjoist to read at sight with as much precision (if not render with the same facility—this to follow) as the modern violinist. It admits of "shifting" from the higher to the lower positions and vice versa, without cramping the elbow or changing the position of the instrument, (both common errors due to lack of system), it keeps the rim away from the body, permitting the tone to come forth unchecked, insures a better position of the right wrist; thus:



[Showing a Straight Wrist. The Correct Position.]

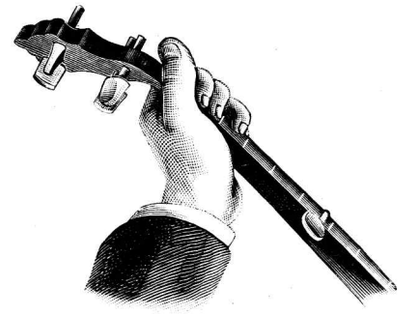
which when the banjo neck is held too close to the shoulder (throwing the lower edge of the head outward) will be curved in an awkward manner over the rim; thus:—



[Showing Wrist Arched over the Rim. Incorrect Position.]

and last, but not altogether least of the advantages to be gained, it combines utility with ease; this position is more graceful and the importance of effect should always be given due weight.

Another word about the left hand position. There seems to be a general tendancy among amateurs to either grasp the neck as one would an axe, with the palm of the hand in contact with the back of the fingerboard; thus:—



[Showing the palm of the hand against the neck. Incorrect.]

or else to go to the other extreme of holding the banjo between the very points of the thumb and first finger. While the former tends to constrain the action of the muscles, the latter is antagonistic to playing with any precision.

The neck should be held between the third phalanx of the thumb and the first joint of the first finger; thus:—

[Showing correct position of the left-hand,—wrist slightly arched. Neck held between first joint of first finger, and third phalanx of the thumb. See large plate 30½.]

with as much strength as seems necessary and no more,—varying this position somewhat in playing "in position" and forming chords, by permitting the thumb to seek the back of the neck generally beneath the first finger.

It is important that the first joint and not the first phalanx of the first finger should be used to hold the neck, as the former plan permits the use of all three joints of that valuable member, while the latter would leave but *two* free for action. The position of the fingers themselves is almost everywhere agreed upon and will not be discussed here, further than to accentuate the importance of fretting as much as possible with the points, and to advise picking the strings *obliquely*, thereby avoiding the harsh jarring tone produced by picking them *upward*.

WHICH FINGERS TO USE.

Most methods on one point agree—the advisability of using all four fingers of the left hand. This is certainly as it should be and leaves no room for argument, but there is considerable speculation as to just which fingers of the right hand should be employed, and there have always been advocates for and against the resting of a finger on the head. Some methods advise the use of the first and second fingers and the thumb, while others argue that the only correct method includes the third finger.

NOTE.—The Author of this work holds that they are both right, in so far as recommending their particular idea goes,—but equally wrong when they do so to the exclusion of any other, and contends that there is room and necessity for both theories properly advanced.

There are movements that cannot be played with the thumb and two fingers, while others are more practical without the use of the third finger. And likewise, at times a finger resting on the head is of inestimable value as an aid to execution and at others a positive hindrance—this depends entirely upon the movement to be rendered. It would seem then that a judicious application of both theories would be the most logical and safest method to adopt. Now the question arises, how are we to know when to put the little finger on the head and when to depend on the "wrist support?"*

There is no absolute law to go by, but it is generally safe to be governed by the following: Rule I.—*In four finger movements (three fingers and thumb) rely on the "wrist support."—In three finger movements (two fingers and thumb) use the "finger support."*

The "little finger support" is found advantageous in all movements where "alternating" is used and as "alternating" has never proved successful between the second and third fingers, this will not conflict with the general rule for "support."—The third finger is used principally in chord and arpeggio movements. It is essential to a good tremolo that a finger should rest on the head, but it often happens that one possesses a little finger so short that the elevation of the hand necessary to this movement cannot be obtained by its use as a support.—It is advisable with such a hand to rest the third finger instead of the fourth on the head—but for the tremolo *only*.

* NOTE.—While the advocates of "wrist support" who object to the placing of a finger on the head certainly have some grounds on which to base their theory, the fact that every modern performer of note uses the "little finger support" must bear some significance.

DIVISION OF EFFORT.

Now we come to the first and most important principle of fingering—the practical division of effort.

It is hardly necessary to argue that if two or three strings are to be played in rapid succession it can be done more easily with three fingers than with one—this is generally conceded and is one of the elementary principles.—But then, why is it that so many banjoists *will* play any number of notes with one finger that happen to be on one string? Simply because they lack *method*, and have either been badly taught or taught (?) themselves, and given the matter little or no thought.

It may not be generally known, but two fingers used alternately can be trained to pick a string *more than twice as rapidly as one*. From this it will be seen that there is a great advantage to be gained by "alternating,"—but alternating like every thing else can be done in a right and in a wrong way, and must be studied and practiced by rule.

In left hand manipulation the same idea should be carried out.—Who will gainsay that four fingers in succession falling on the frets that naturally come beneath them—for instance first, second, third and fourth fingers on the first, second, third and fourth frets, should be used in preference to one or two fingers for all four notes?—(another and very simple illustration of the division of effort—four notes—four fingers.) Now if the first, second, third and fourth fingers are opposite the first, second, third and fourth frets, and the first, second and fourth frets only are to be stopped, why not use the first, second and fourth fingers skipping the finger which happens to be opposite the note omitted? or if the second fret is omitted why not omit the second finger? etc., etc. This example treats of the notes as they occur in a chromatic scale and is the basis of the theory adopted in the fingering of other scales, for which the general rule is: *skip a fret skip a finger*. Exceptions to this rule occur where the number of frets included in the position exceeds that of the fingers.

The simplest examples are generally the most explicit and the foregoing, merely suggesting the method employed throughout this work, are cited to emphasize the strength of the theory that the secret of rapid execution lies in the division of effort, and that alternating is one of the governing features of the principle. There are other and equally important factors, and a close observance of the following rules will give the key note to the situation. The exceptions which prove the rules follow them:

Rule II.—Do not pick two notes in succession with any one finger of the right hand.

Rule III.—Do not use one finger of the *left hand to fret two consecutive notes other than those of a chord or position.*

The exceptions to Rule II, are these: The "*Tremolo*" (a rapid succession of notes) is played with one finger. "Sliding" from one string to another to keep up the order of alternating is permissible, and also several notes are sometimes taken with one finger for the sake of effect, as for instance, bass notes played with the thumb to obtain force and mark a passage.

The exception to Rule III, occurs when performing a "slur" or "slide."

Without further ado we will introduce a few exercises in "alternating" preparatory to scale practice.

The rules for "alternating" are:

Rule IV.—*Alternate with the thumb and first finger on the fourth, third and second strings, and with the second and first fingers on the first string.*

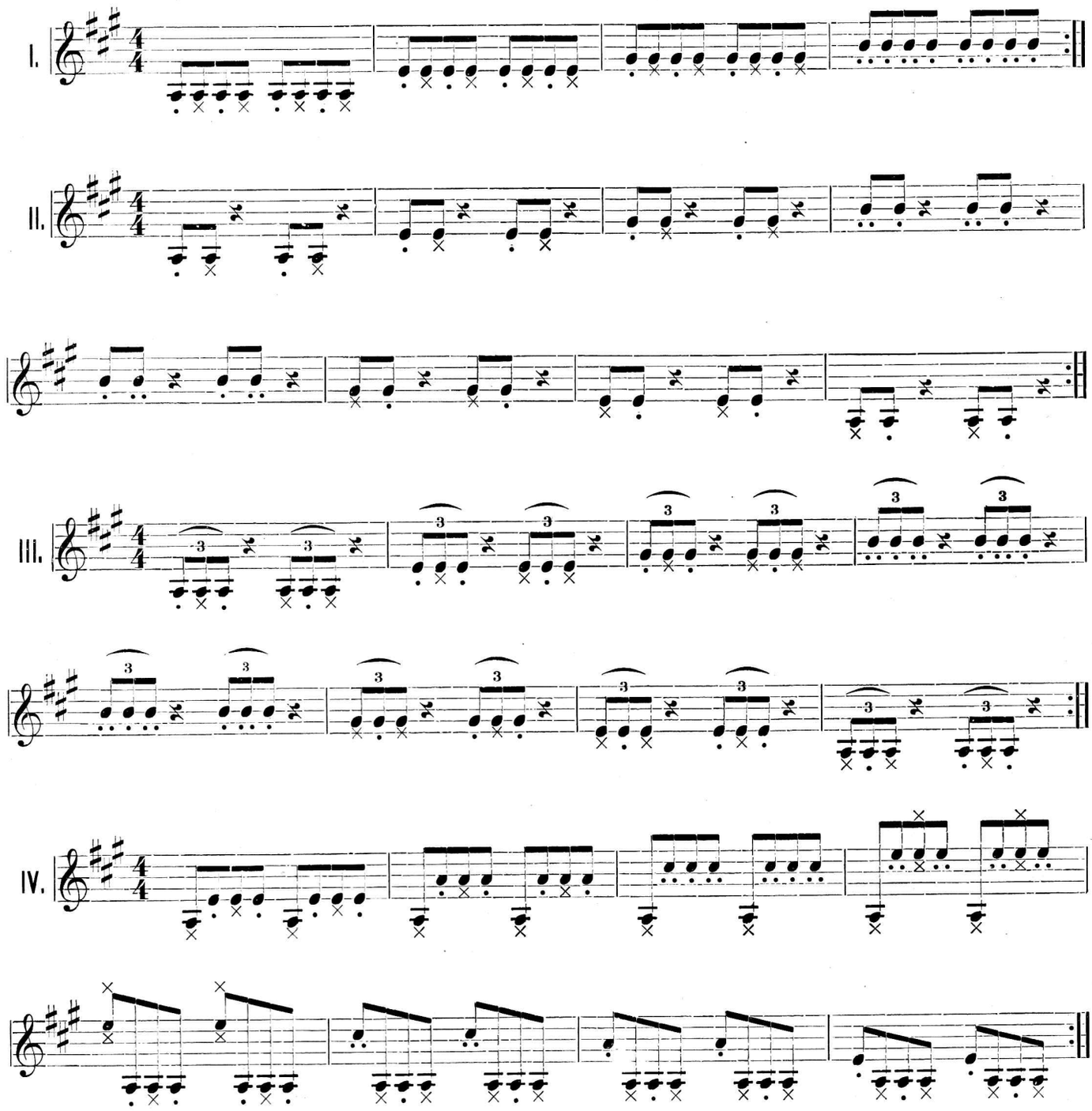
Rule. V.—*The first finger should precede the thumb in ascending and follow the thumb in descending scales.*

The following being three finger exercises (two fingers and thumb) are played with the "little finger support.' The thumb must be held well ahead of the fingers.

EXERCISES IN ALTERNATING.

Right-hand fingering. (•), first finger. (••), second finger. (•••), third finger. (×), thumb.

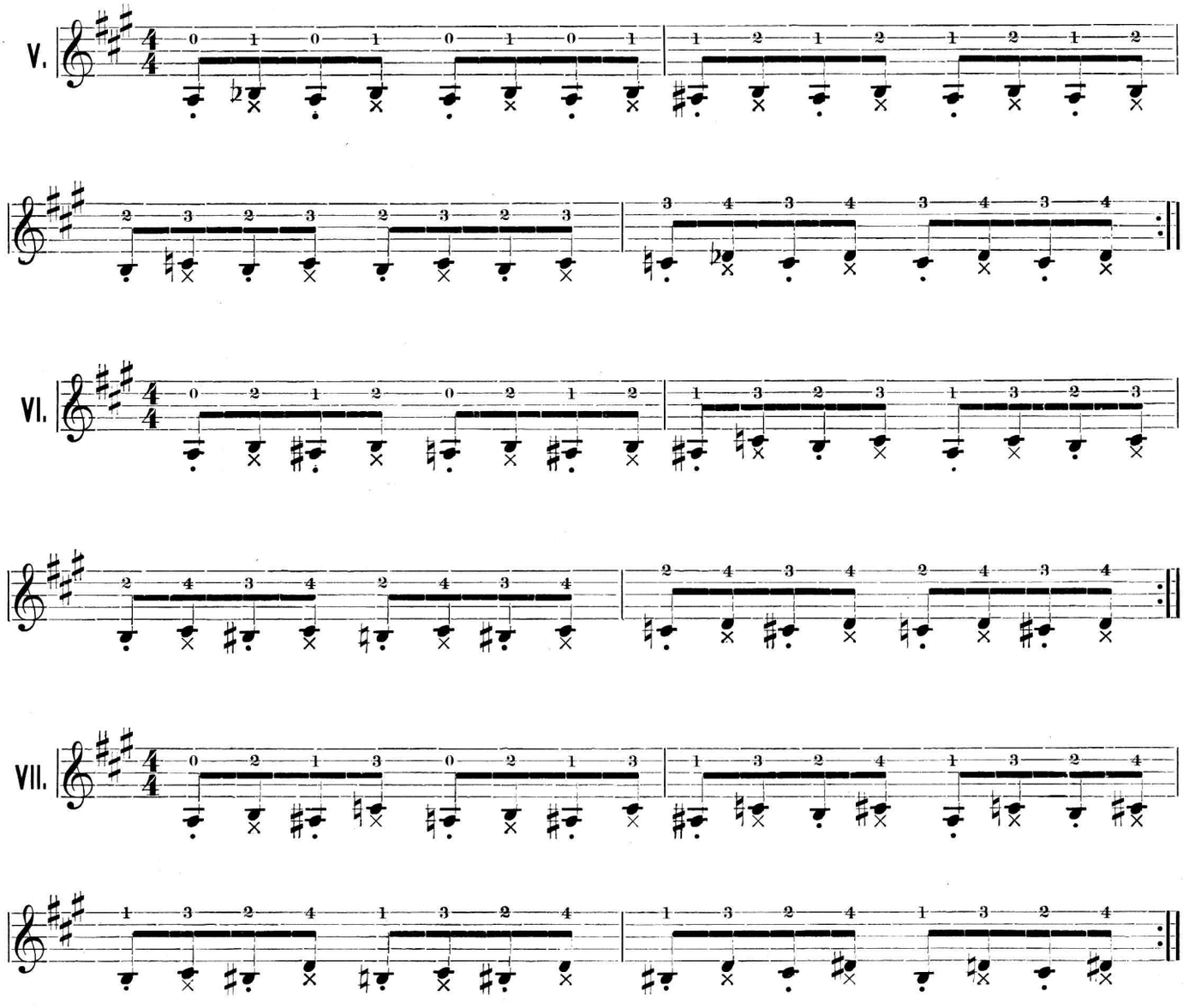
Left-hand fingering. (1), first finger. (2), second finger. (3), third finger. (4), fourth finger.

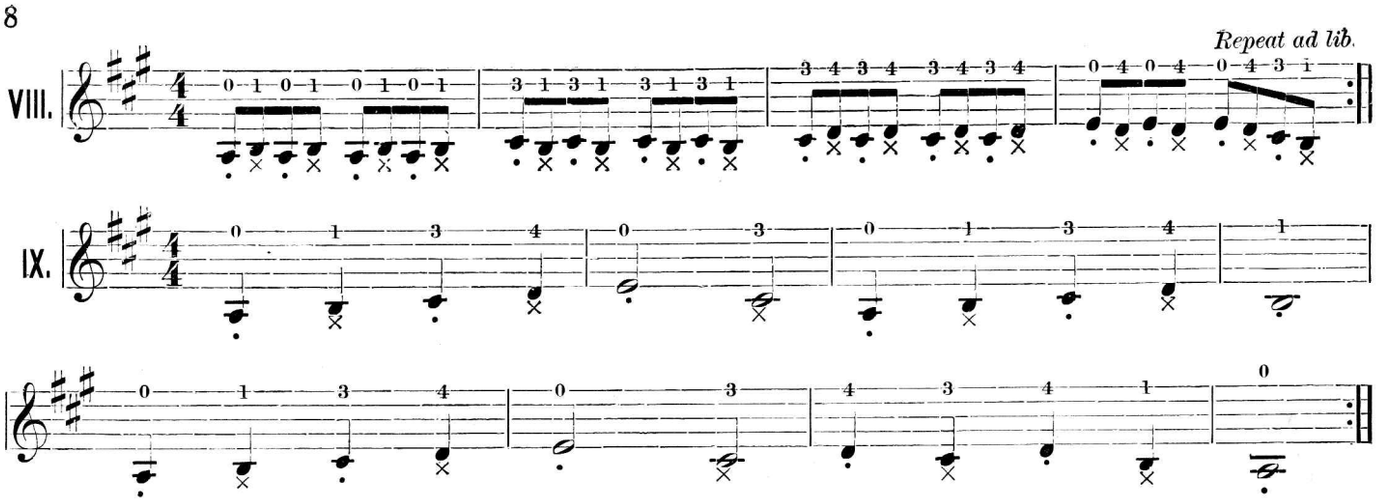
An × placed over the E ( ) indicates that it is to be played on the 5th string, otherwise it should be played on the 1st string.

It will be observed that in the foregoing exercises the first finger leads the thumb in ascending, and the thumb leads in descending, except where notes occur on the first string.

EXERCISES FOR BOTH HANDS.

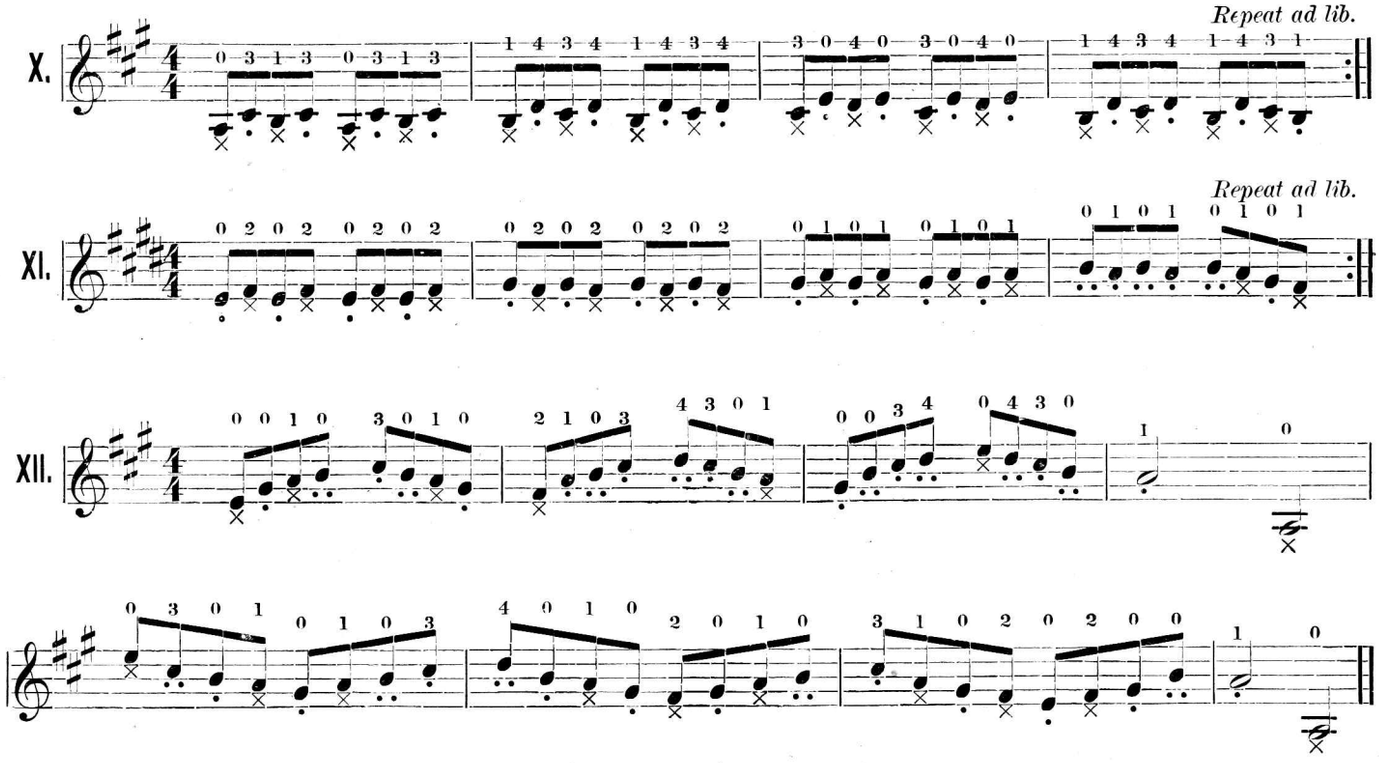
In these exercises, the fingers of the left hand, when not in use, should remain on the frets. This is a point to bear in mind at all times. In writing studies like the following three for the banjo, it becomes necessary to employ a number of chromatics, owing to the fact that from one fret to the next the progression is a half step.* (This particularly for the benefit of those who have studied the piano and recall the simplicity of the notation of the first exercises taught on that instrument.

* In this work the word "tone" is used exclusively to signify a musical sound.—As every tone is caused by a *certain* number of vibrations, when we speak of a tone we mean a definite musical sound of certain pitch. For the popular terms "whole-tone" and "half-tone" the more appropriate terms "step" and "half-step" are substituted, they being used by such eminent theorists as Richter, Weitzmann, Vincent, MacFarren and others. The advisability of this substitution is evident,—The word "step" immediately suggests a progression from one tone to another, whereas the word "tone" merely suggests one sound without reference to any other. Then, again, it is easier to imagine a step being halved than a tone undergoing that process.

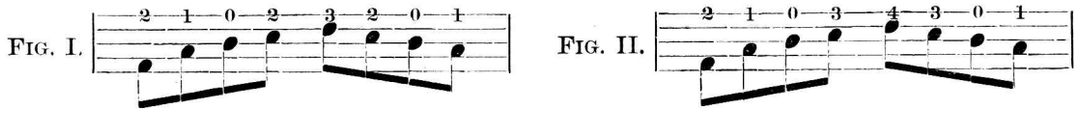
(NOTE.—The influence of a chromatic extends throughout a measure unless cancelled.)

No's V, VI and VII, should first be practiced as written, on the bass string, and then transposed on each of the other strings, substituting the first and second fingers of the right hand for the thumb and first when playing on the first string. In this, as in most cases, use the second finger (of the right hand) first on the first string.



In the fourth measure of No. IX, note that the first finger is used to play the B. and again, for the following note A (in the next measure.) This may seem contrary to Rule II, but is permissible under the circumstances. First:—The B is a whole note, and therefore the A does not follow it in rapid succession. Second:—If we were to play the A with the thumb it would necessitate one of two things: either taking two of the following notes with one finger, or leading with the thumb in ascending from 4th to 3rd string, which is objectionable in most cases.



Exercise No. XII, suggests a point upon which considerable difference of opinion exists. Which is the correct left hand fingering of the second measure, Fig. I, or Fig. II?



We think the latter, because in it each finger of the left hand is used once, while in the former the second finger is used twice to the exclusion of the fourth. While this may seem of little importance to the uninitiated, yet it is one of the many small points which go to make up a perfect system. This is the fingering advocated in this work for the scale of A, of which the above figure is a section.

SCALES.

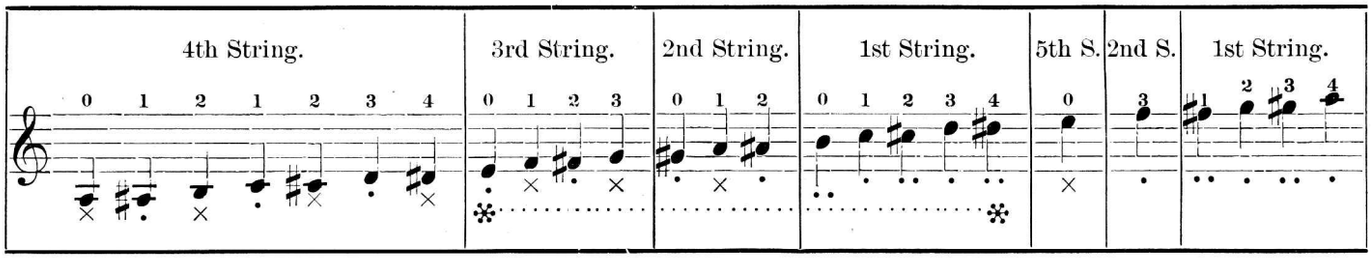
THE CHROMATIC SCALE.

A series of twelve different tones, ascending or descending by consecutive *half steps** (the octave of the starting tone being generally added to complete the series) is called a *Chromatic*, or more strictly, *Chromatic-Diatonic* scale.

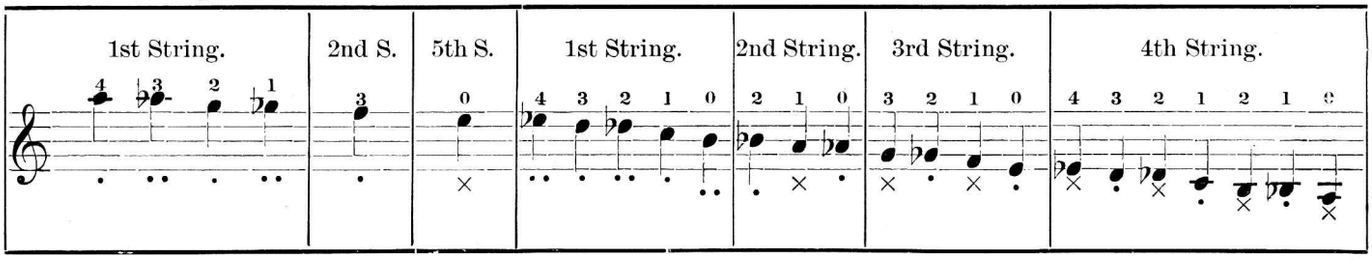
The Chromatic is probably the most important of all scales and the best one to exemplify our system of fingering.

CHROMATIC FORMULA, No. 1.

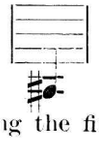
Ascending. FOR TWO OCTAVES.



Descending.



We find on looking at this scale that there are seven notes to be played on the bass string of which six are "fretted notes," and we have but four fingers with which to fret them. Of course this necessitates using some of these fingers twice and several different forms suggest themselves—for instance, first, second, third, fourth fingers, and then third and fourth again, or first, second, third, first, second, third, &c., &c. But the fingering given here is considered the most practical.

It is important that the first finger should remain on A sharp until after the B is played and then be transferred to the C by an arm movement without lifting the finger from the finger-board or changing the position of the wrist, (See Rule VI.) This will facilitate manipulation.

In the next position (* to *) there are four frets and four fingers with which to fret them,—there is hardly any necessity for explanation here. The E is played on the fifth string. By taking the F on the second string we get the last five notes of the scale in one position—When the F is played on the first string, another movement of the wrist becomes necessary.

Rule VI.—*In passing from string to string retain one fret until the following is secured:—*

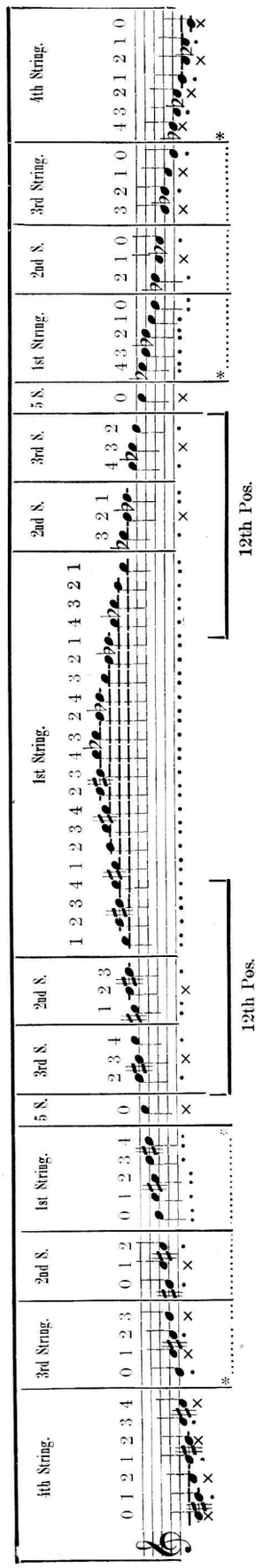
Example.

In this example the fourth finger remains on the G until the first finger rests firmly on the G♯, and the third finger retains the A♯ until the B is fretted with the first. This system will insure an evenness of touch and precision, and should be practiced in the playing of all other scales. Exceptions occur, when the frets are too far apart to be reached with ease and when an open string intervenes.

* On stringed instruments the progression from one fret to the next is a *half step*. (See note top of page 7.)—hence a Chromatic scale played on one string on the Banjo would be a series of consecutive frets.

CHROMATIC FORMULA, No. 2. (FOR THREE OCTAVES.)

CHROMATIC SCALE OF A.



CHROMATIC FORMULA, No. 2.

Formula, No. 2, is the same as No. 1, as far as the E Note that the next section of the scale is taken in the 12th position. The advantage of playing in position is obvious:—the ten notes taken in the 12th position correspond to the ten notes beginning with F and can be played without moving the wrist, while if played on one string, three different positions would be required. The remaining notes of the scale are played on the first string as no advantage can be gained by seeking another position so high on the neck.

The last three notes are to be played with the last three fingers, 2nd, 3rd, and 4th. Of course the 1st, 2nd, and 3rd fingers might be used, but this would necessitate a higher position of the hand—besides it is better to end a scale with the little finger.

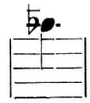
The right hand fingering requires little explanation:—an exception to Rule IV, occurs in the 12th position where the G sharp or is played with the second finger to obviate *leading* with the thumb in ascending and the first in descending.

In learning a scale of such compass as this, it is not advisable in the beginning to practice the whole at once. The way in which to obtain the best ultimate result is to divide the scale in sections and as nearly as possible confine each section to one position. Practice each section separately, (Figs. 1 and 2.) Then join these sections (Fig. 3,) and practice as before, continue in this manner until the whole scale is mastered.

Fig. 1.

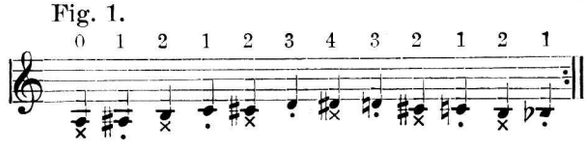



Fig. 2.

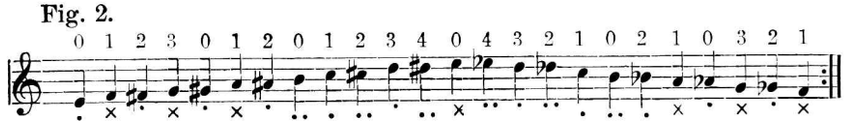
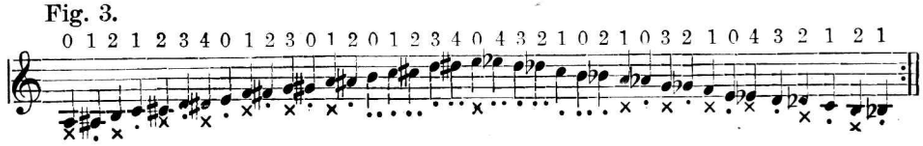
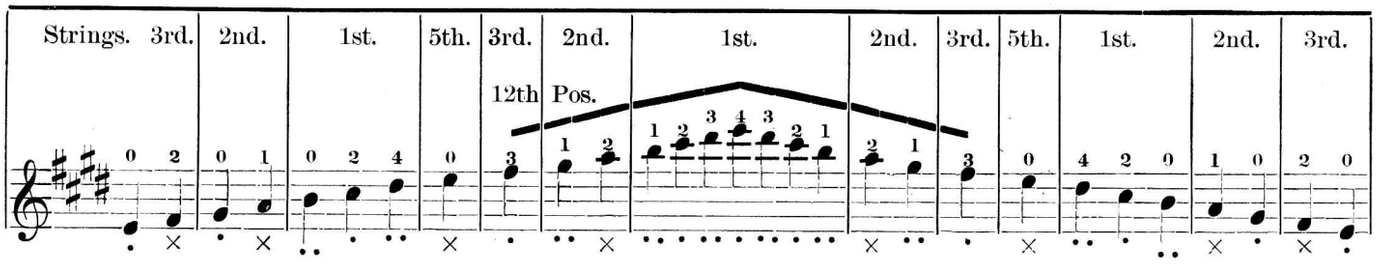



Fig. 3.

SCALE OF E.

Next in significance to the Chromatic scale, is the scalce of E. On this scale is based our most important major formula.

SCALE OF E.



In this scale, as in the chromatic formula, No. 2, the G sharp is played with the second finger of the right hand to obviate leading with the thumb in ascending, and the first finger in descending. When the E is played on the third string, (See major formula, No. 1.) the exception does not occur—the reason for this is apparent.

MAJOR FORMULAS.

There are two formulas by which all the major scales can be played, although a third is better for the scales of D and E flat. These formulas we will designate by numbers.

Major formula, No. 1, is the one alluded to above as our most important major formula, by which all major scales starting from a tonic on the third string are played:—E, F, F sharp, (or G flat), G, and A flat.

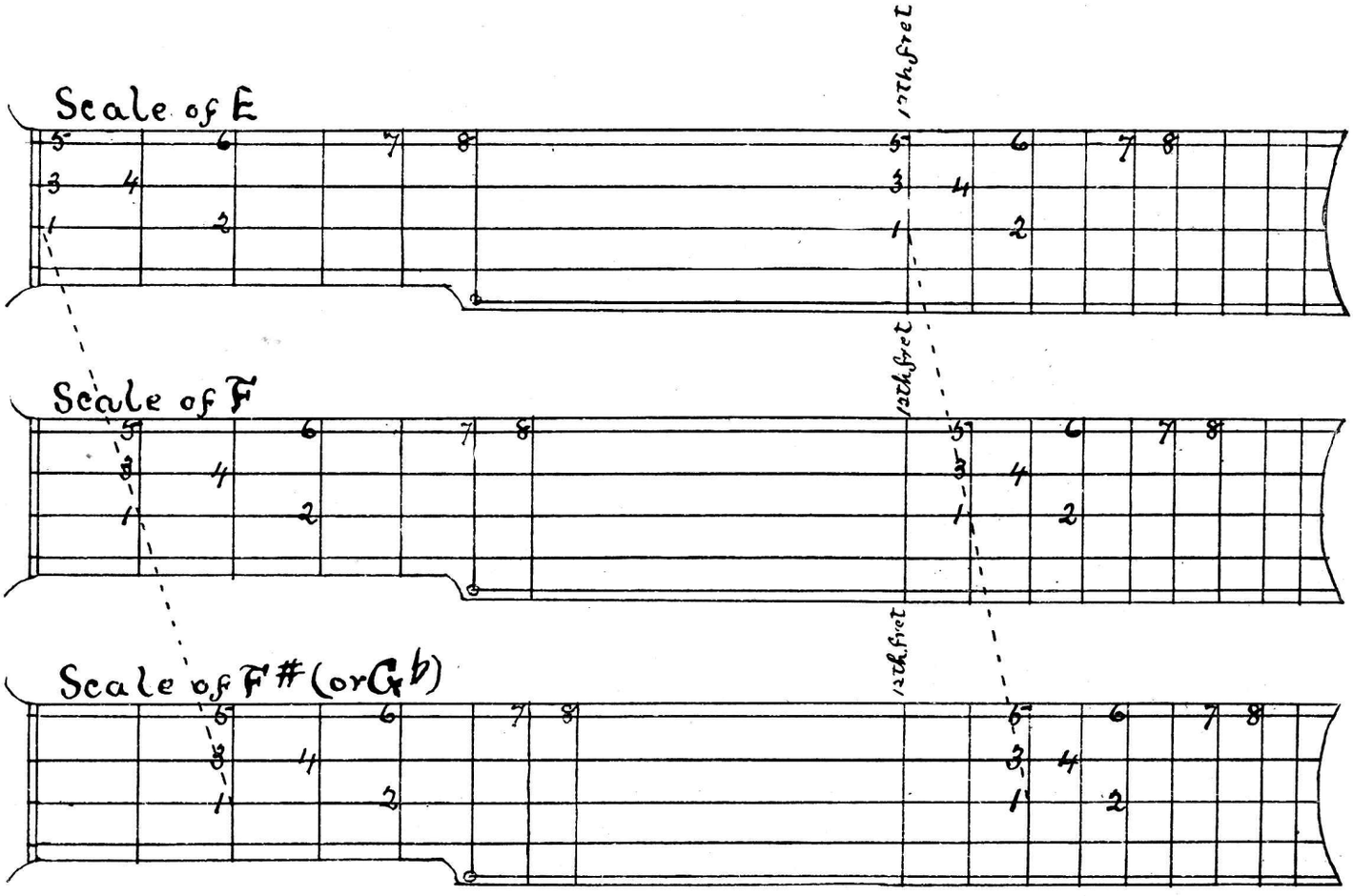
No. 2, the formula for all major scales starting on the bass string, (excepting D, and E flat); A, B flat, B, (or C flat), C, and C sharp, (or D flat).

No. 3, the formula for the scales of D and E flat.

The importance of these and the other formulas, and the advantage of this system of positions over the old method of playing the last octave of a scale on the first string, is made evident in the following explanatory chart and formula map. The fingers of both hands are used in the same order in each scale in a formula, (excepting of course in the scales of E, and A, which alone embrace the open strings), and the degrees of the scale in each key retain the same relative position on the finger-board, (See chart, page 12.) Thus by mastering one formula, a number of scales are acquired.

Chart Showing the Theory of Major Formula No. 1

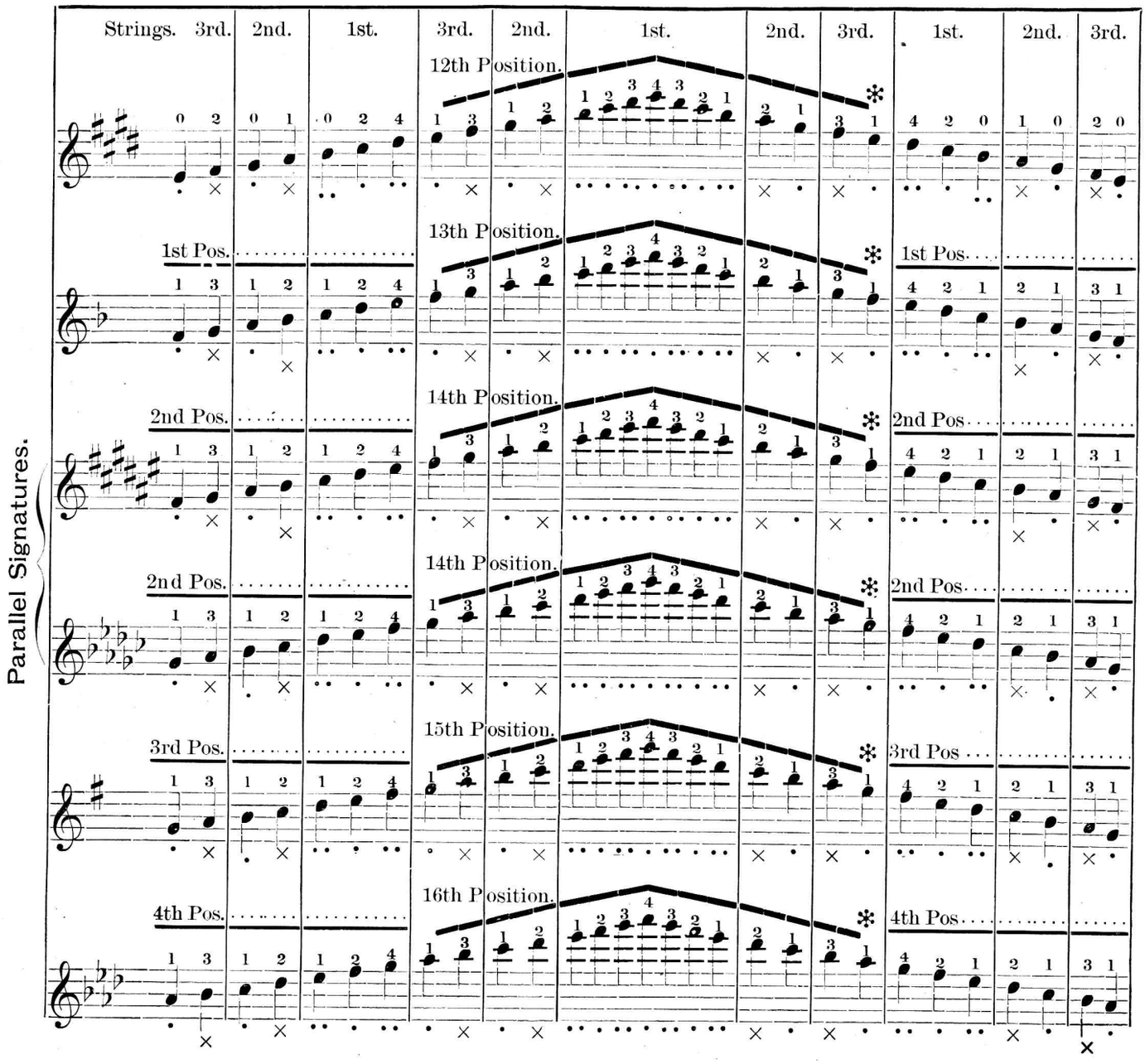
The figures stand for the degrees of the scale in two octaves. When playing a scale the 8th degree of the lower position is omitted, as it would produce a unison with the first degree in the higher.



It will be observed that, in each scale, the higher position is twelve frets above the lower one. For instance, the scale of F starts in the 1st pos. and continues in the 13th* and the scale of F sharp which starts in the 2d pos. ends in the 14th*

CHART OF MAJOR FORMULA, No. 1.

The scale of E is given again in this chart to more clearly define its connection with the formula. The keys of F♯ and G♭ are termed parallel signatures and actually produce the same tones—G♭ is F♯ enharmonically written—we give both, however, to further illustrate our theory.

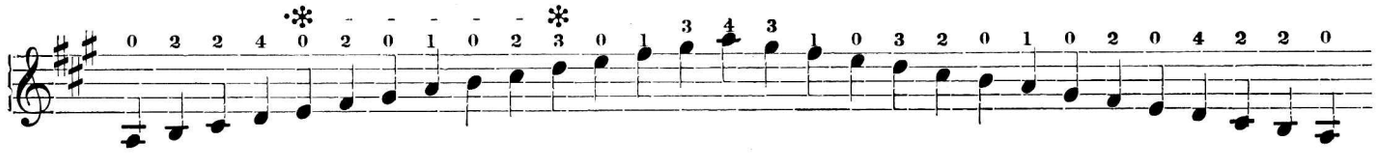


Apply the same method of practice as suggested on page 10.

Learn the scale of F, carefully observing all the rules, and the other scales will be easily acquired.

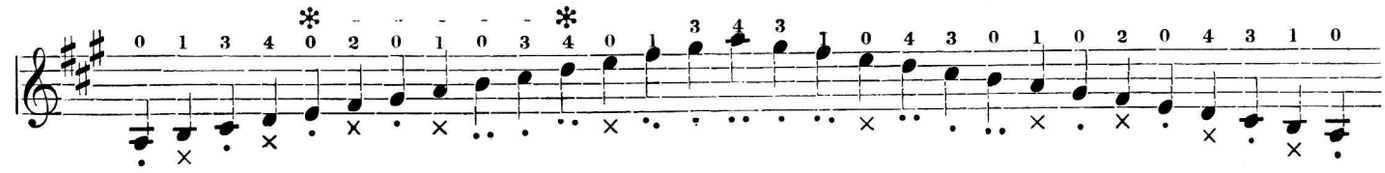
MAJOR FORMULA, No. 2.

Major Formula, No. 2, for the scales of A, B flat, B (or C flat), C and C sharp (or D flat) is given in two series; series "A" for scales in two octaves, and series "B" for three octaves. The question, "what is the correct left hand fingering of the scale of A?" (which forms the basis of Formula, No. 2. as E forms the basis of Formula, No. 1,) has always been a source of contention between banjoists of the advanced school, but the author can see but *one* practical and common sense way to finger it. To emphasize the logic of this method it is only necessary to compare it with the one in common use to-day.

Fig. 1. The scale of A showing the left hand fingering usually approved.

In the foregoing scale the second finger of the left hand is used twice on the bass string, to the exclusion of the 1st or 3rd fingers. And again twice in the position marked ✲ - - - ✲ to the exclusion of the 4th finger. Does this show good method?

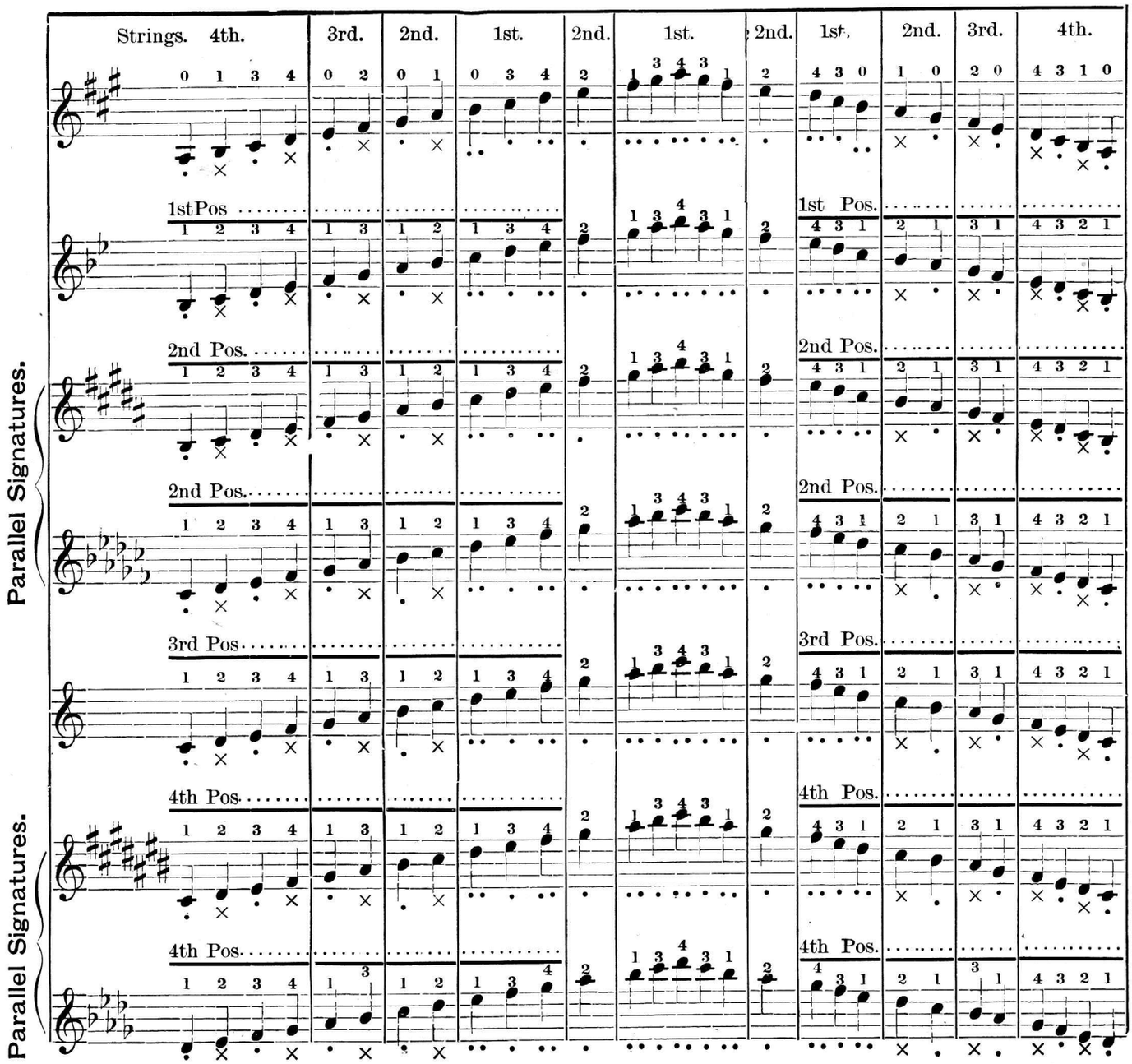
Why not play the B, C♯ and D with the 1st, 3rd and 4th fingers, skipping a finger for the fret omitted? These fingers face directly opposite their respective notes, (*i. e.*, those apportioned them in our method) and do not require the shifting of position, necessitated by the former method. The last three notes of the scale (F♯, G♯ and A) are fretted with the 1st, 3rd and 4th fingers and have identically the same intervals between the frets as the B, C♯ and D on the bass string, then why not finger the latter in the same manner as the former?

In Figure 2, where a fret is skipped a finger is omitted, and in the position ✲ - - - ✲ the notes are equally divided between the fingers employed. In scales played in positions (having no open strings) the number of frets in a position exceeds that of the fingers, hence the exception which will be noted in the Formulas. (See page 5.)

Fig. 2. The scale of A correctly fingered:—

MAJOR FORMULA, No. 2.

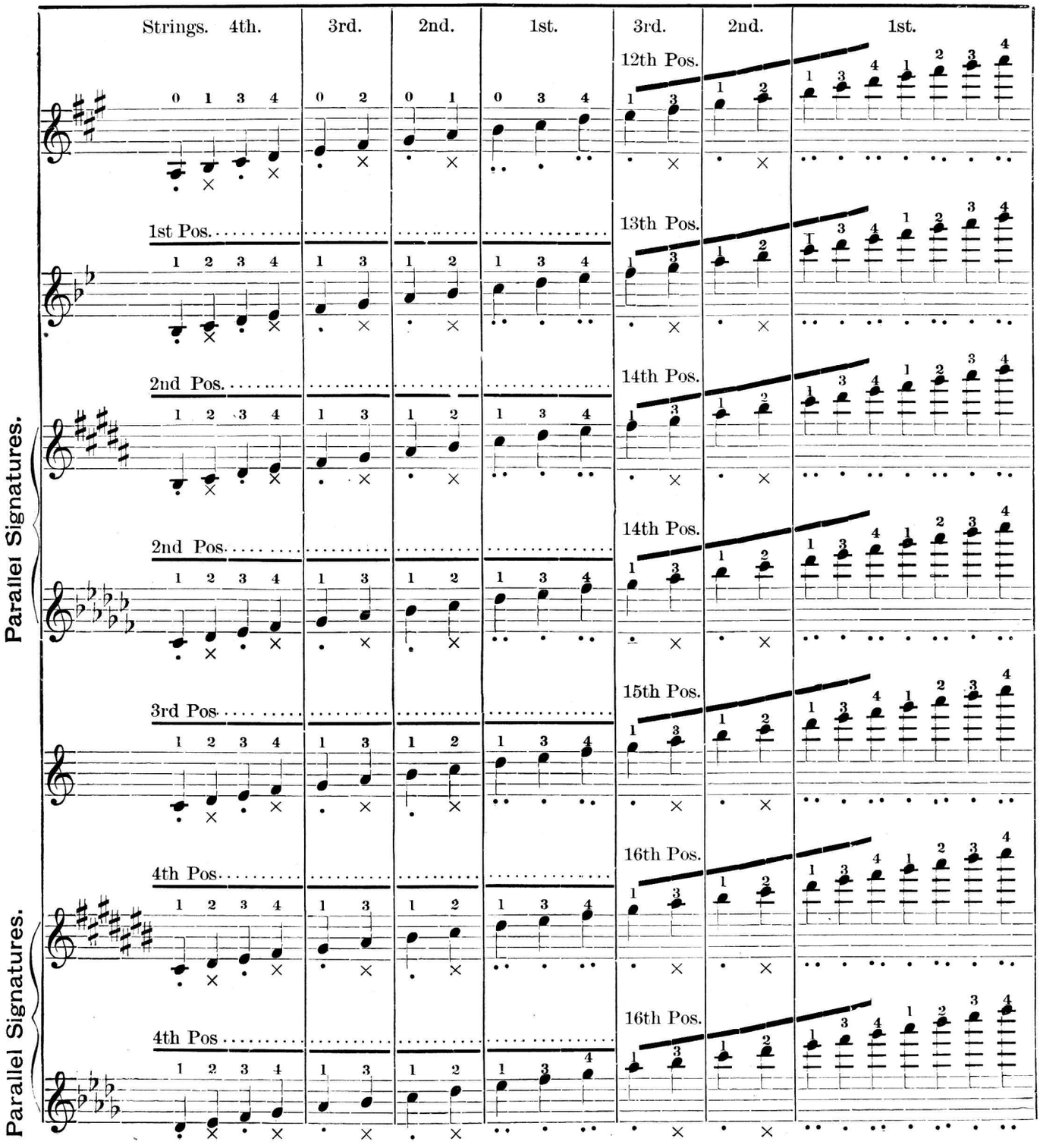
Series "A."

FOR TWO OCTAVES.



MAJOR FORMULA, No. 2.

Series "B."

FOR THREE OCTAVES.

Owing to the length of the series "B" scales it is not expedient to give them both ascending and descending. To play a descending scale read from right to left.

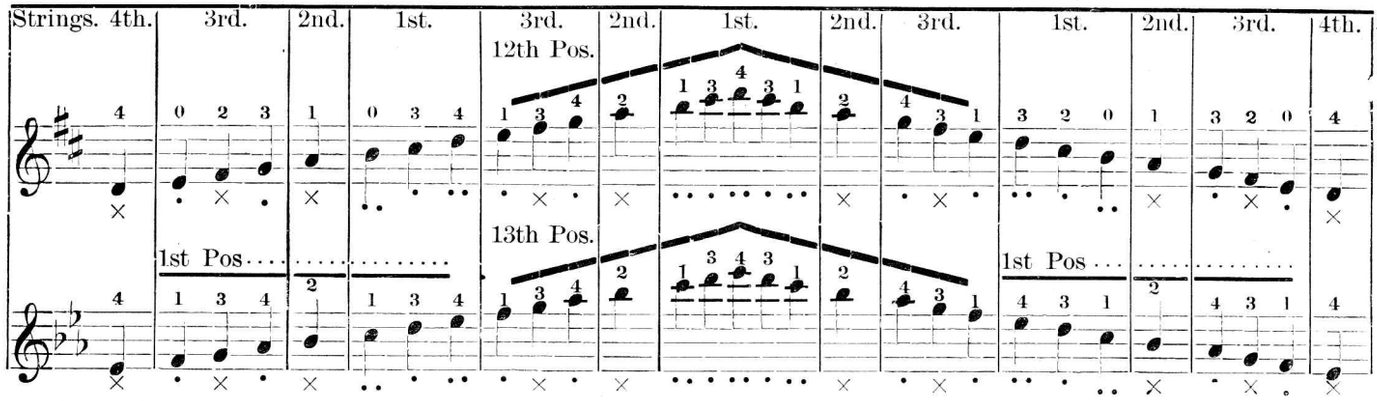
The scales extending so far above the staff are naturally difficult to read, but as each scale is a counterpart of the first, they can be learned as readily by formula as by actual reading, and with continued practice, the notes on the head can be played with as much precission and ease as the higher notes on the violin. But it is as useless for one possessing an imperfect ear to attempt to play these scales as it would be for the same person to attempt to play the violin or any other instrument without frets.

In playing scales, the upper notes of which can not be reached whilst holding the banjo arm in the ordinary manner, the thumb may be released from its customary position and held firmly against the first joint of the first finger.

Always make this transfer of the thumb when about to fret a note with the first finger: for instance, in the scale of C, the position of the thumb should be changed after playing the F and before fretting the G.

Banjos differ so in construction that there can be no rule to decide at what particular fret to make this transfer of the thumb. The longer the banjo neck, the higher the notes that can be reached in the ordinary manner.

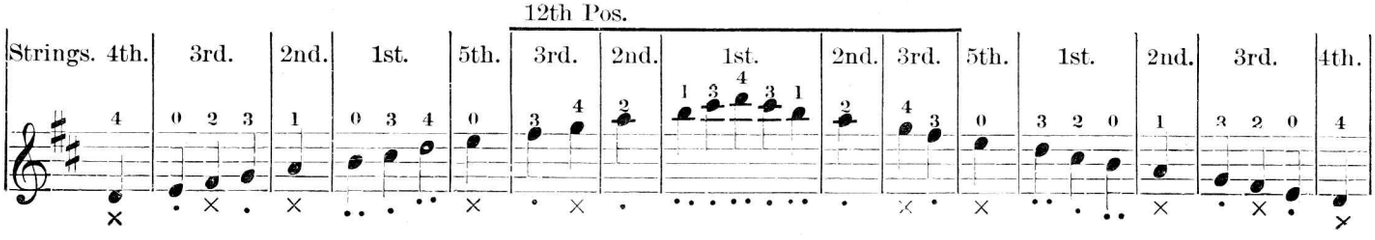
MAJOR FORMULA, No. 3.



An exception occurs in both scales where the thumb of the right hand is used to play the 2nd string.

The scale of D can also be played taking the E on the 5th string.

This will slightly alter the fingering.



MINOR FORMULAS.

There are three formulas for minor scales.

No. 1. For the scales of F♯, G and G♯ (or A♭) minor.

No. 2. For the scales of A, A♯ (or B♭) B, C and C♯ minor.

No. 3. For the scales of D, D♯ (or E♭) E and F minor.

In the following minor formulas, the *melodic* scales only are given.

The *melodic* minor scale has a raised 6th and 7th ascending and restored 6th and 7th descending.

To play a *normal* minor scale, omit the accidentals.

The *harmonic* minor scale has a raised 7th *only*, both ascending and descending.

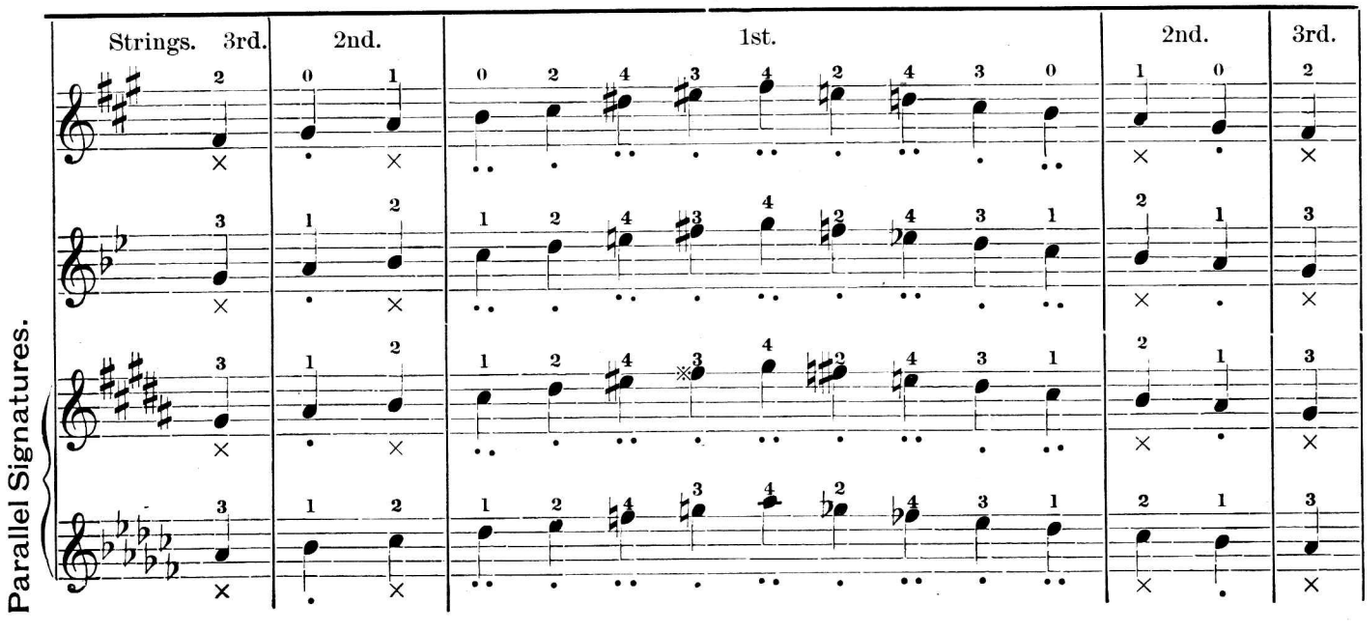
In changing the scales to *normal* or *harmonic* the fingering of both hands must be altered, but in no case will this be so material as to require further illustration.

Careful study of the formulas given should qualify any student to adapt the theory correctly for himself.

MINOR FORMULA, No. 1.

Series "A."

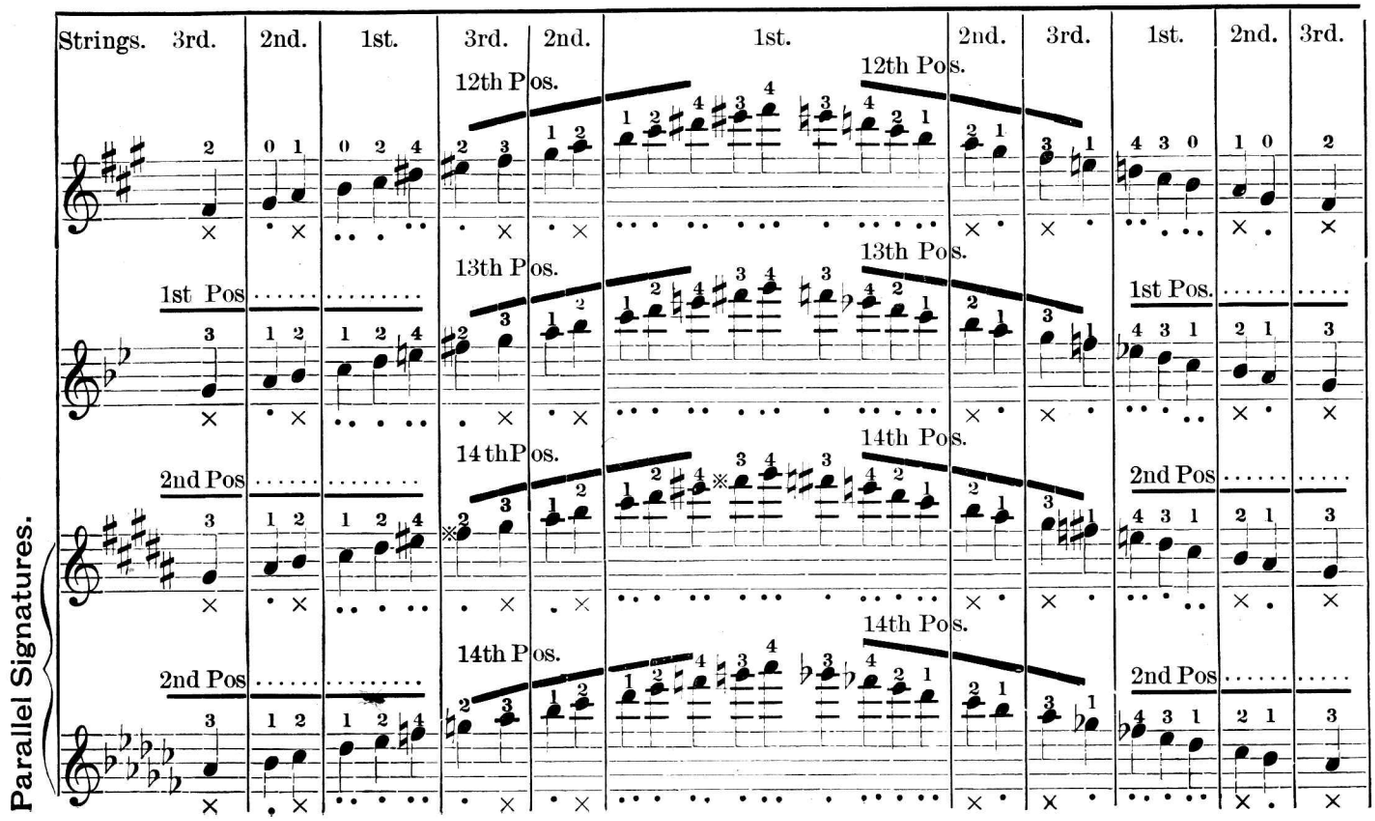
FOR ONE OCTAVE.



MINOR FORMULA, No. I.

Series "B."

FOR TWO OCTAVES.

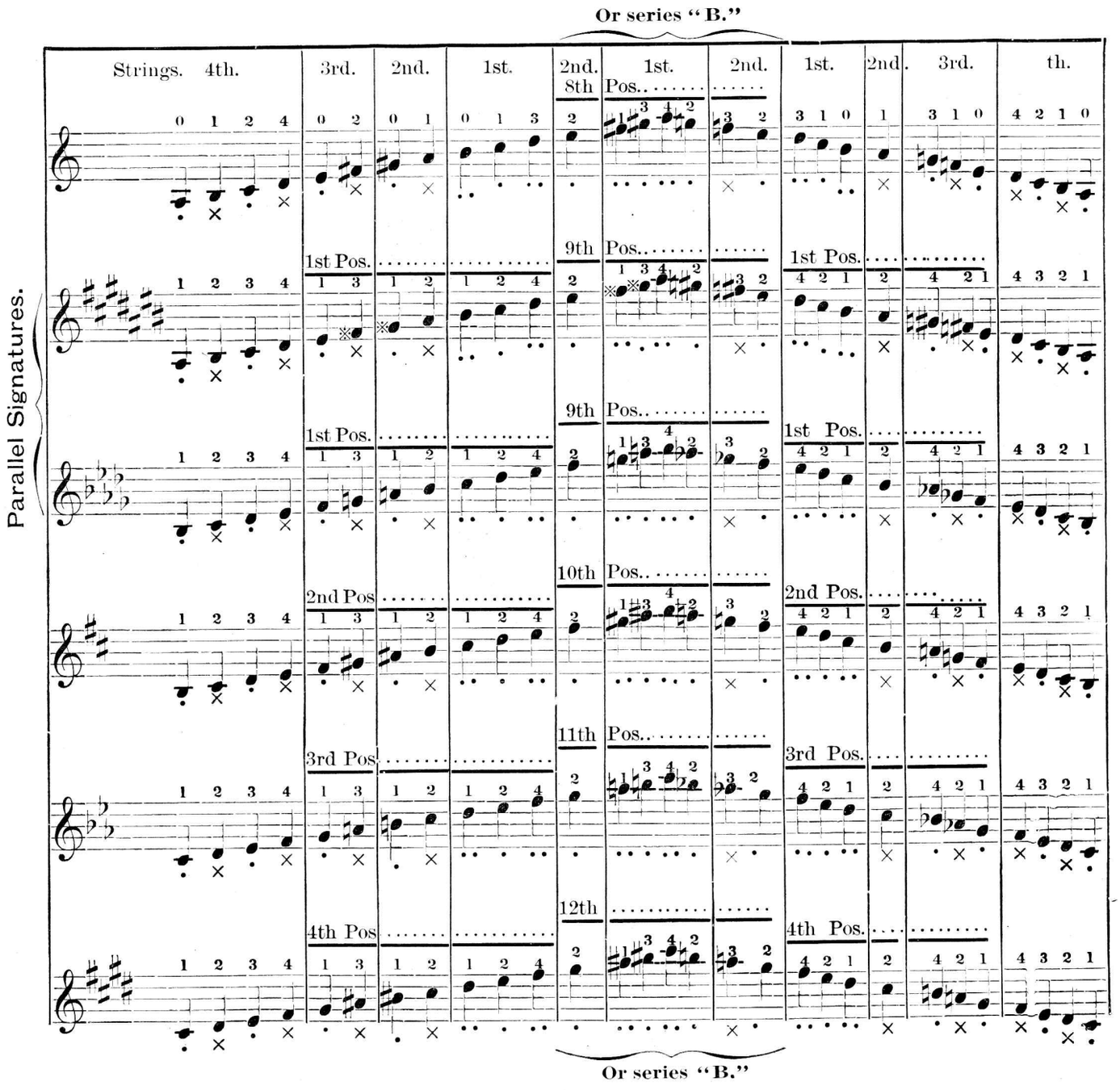


Geo. W. Gregory

MINOR FORMULA, No. 2.

Series "A."

FOR TWO OCTAVES.



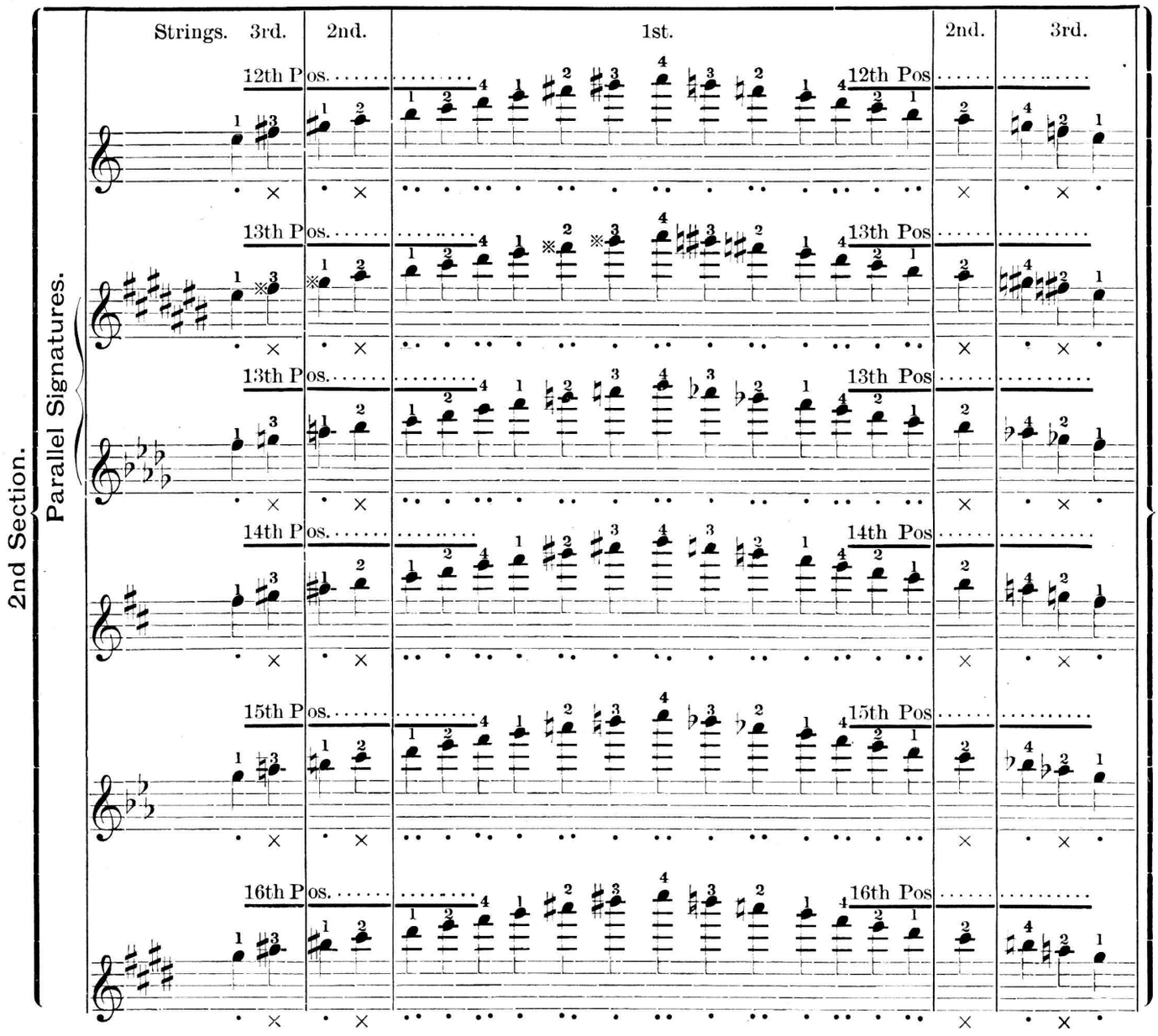
To play three octaves in this formula, omit the section of the scale enclosed by brackets and insert series "B" on opposite page.

MINOR FORMULA, No. 2.

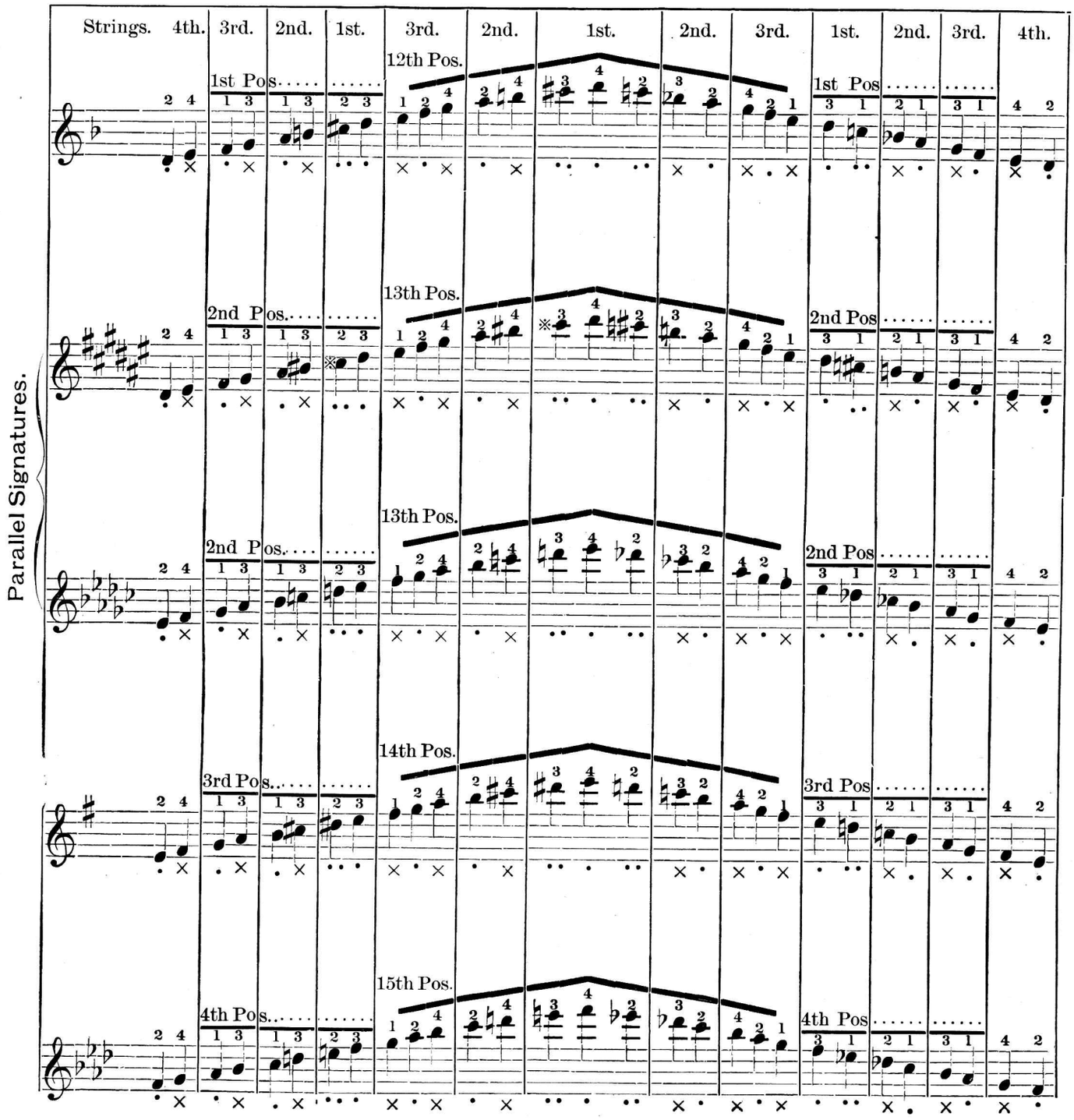
Series "B."

FOR THREE OCTAVES.

(To be played in connection with series "A.")

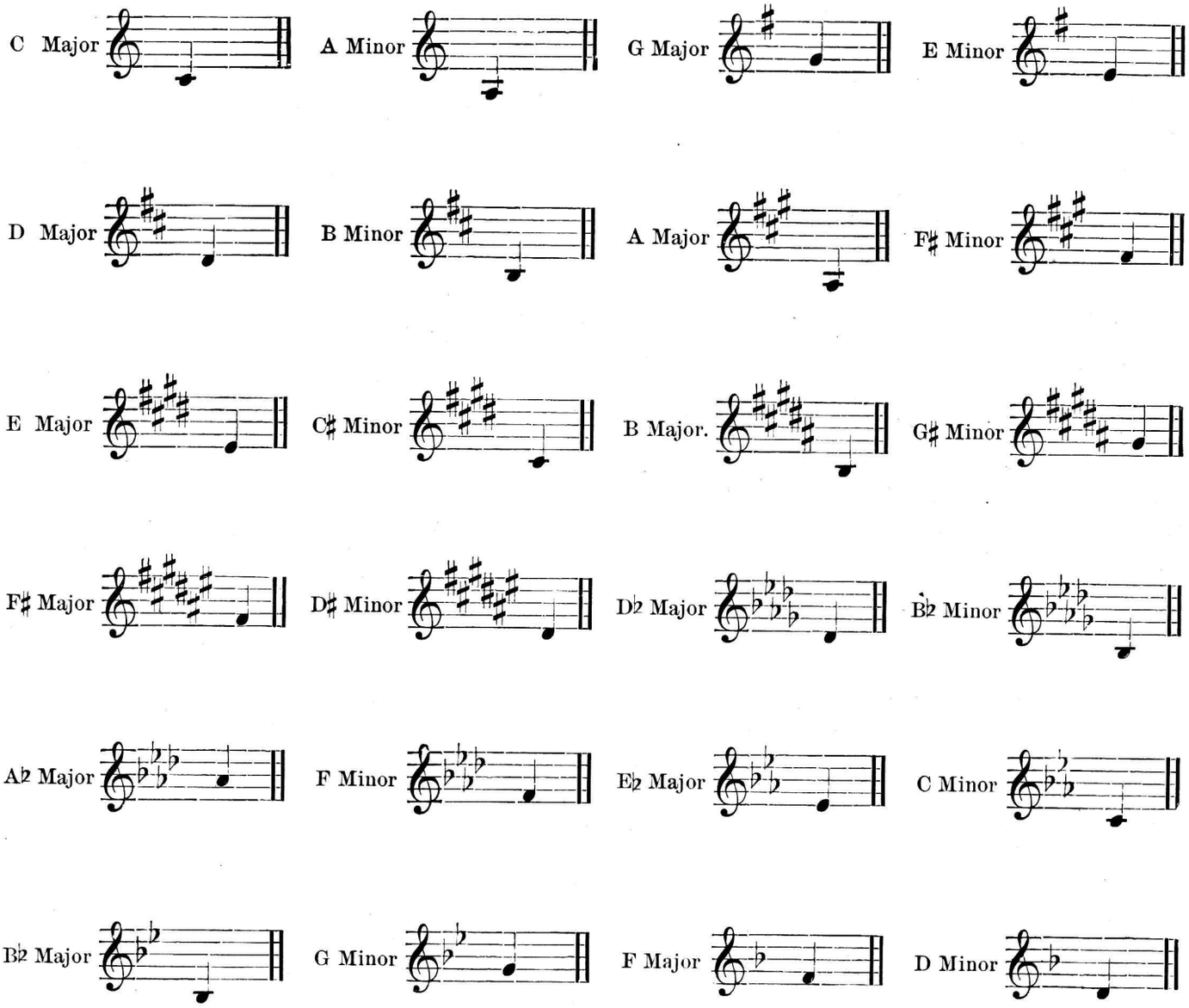


MINOR FORMULA, No. 3.



Major formula No. 2, and Minor formulas Nos. 1 and 2 are arranged in two series: "A" and "B" each having a different compass and the latter requiring greater facility. The choice of the "A" or "B" series is left to the option of the student. It is advisable, however, to learn both.

Having learned all the scales, the student should practice them in the order exhibited in the following plate and supplement each scale with a cadence formed of the Tonic, Sub Dominant, Dom. 7th and Tonic chords of the key.

The Correct order of scale practice giving the Major and relative Minor keys.

It will be observed that in the foregoing order of practice, certain scales which appear in the formulas are missing. These scales are rarely used and have their parallels in other of the scales given,--hence the omission.

ARPEGGIOS.

The importance of arpeggio practice is second only to the practicing of scales, and a thorough knowledge of the several *positions of the chords not only facilitates the playing of the exercises but enhances the value of the study.

While, as set forth in the introduction, this work is intended to meet the requirements of advanced pupils particularly, yet there are many of these who have but an imperfect idea of chord formation and as this knowledge is essential to a comprehensive understanding of the formulas for arpeggios explained herein, the following chapter on the subject, though necessarily brief, will be found invaluable.

A BRIEF CHAPTER ON CHORD FORMATION AS A PRELIMINARY TO ARPEGGIO PRACTICE.

A chord is a simultaneous sound of several tones combined according to certain laws. At least *three* different tones are requiste to form a complete chord, hence certain two-voiced combinations are chords in a limited sense only.

The notes of a scale (termed degrees) have given names which signify their importance harmonically and position in the scale.

The degrees of a scale beginning with the *first* and ascending, are named as follows:—

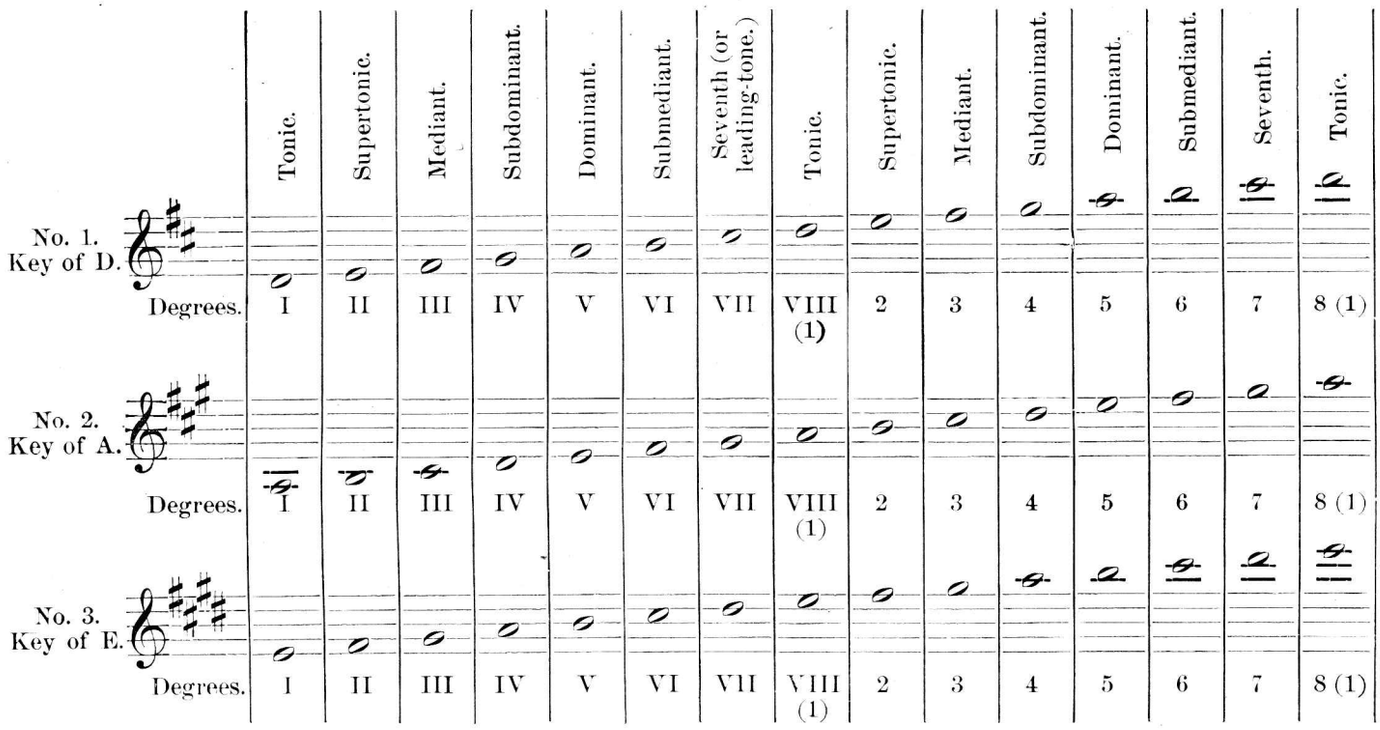
1st Degree, Tonic.
2nd Degree, Supertonic.
3rd Degree, Mediant.
4th Degree, Subdominant.
5th Degree, Dominant.
6th Degree, Submediant.
7th Degree, Seventh or leading-tone.

The 8th Degree is in reality a repetition of the *first*—hence it is the *tonic* in a higher pitch and the succeeding tones follow in the same order as before.

CHART SHOWING THE DEGREES AND THEIR NAMES IN THREE DIFFERENT KEYS.

To make it more explicit two octaves of the scale are given. Roman numerals being used to denote the degrees in the lower octave, and Arabic figures for the higher.

Figure 1.



*The term "position" is used here and in the exercises which follow, in its sense as applied to the formation of chords, and *not* to denote any particular fret upon the banjo neck.

In the key of D (No. 1.), D is the *tonic*, E the *supertonic*, F♯ the *mediant*, G the *subdominant*, etc. In the key of A (No. 2.), A is the *tonic*, B the *supertonic*, C♯ the *mediant*, D the *subdominant*, etc., and in the key of E (No. 3.), E is the *tonic* and so on. Hence, a chord taking the first degree of any scale (minor or major) as its fundamental would be the *tonic* chord of that key. With the fourth degree as fundamental it would be the *subdominant*. With the *fifth degree* as fundamental the *dominant* chord, etc., etc.

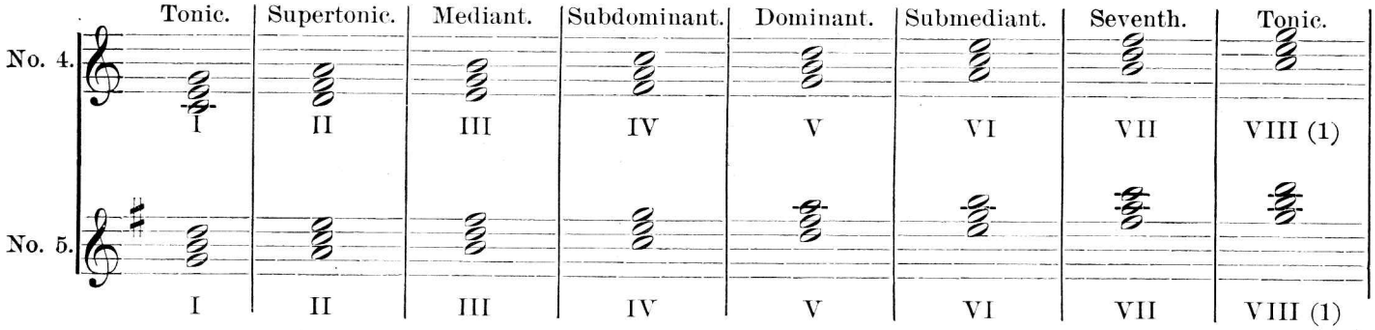
The particular species of chord to which we will first devote our attention is the three-voiced chord called the *triad*.

A *triad* consists of a tone assumed as a fundamental with its *third* and *fifth* added and takes its name from the degree upon which the fundamental is situated.**

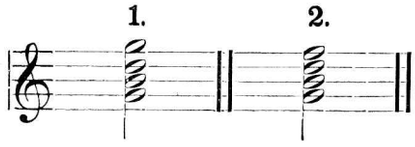
In No. 4, the first triad is the *tonic* of the key of C, of which C is the fundamental, E the *third* and G the *fifth*.

The fourth triad is the *subdominant*, of which F is the fundamental, A the *third*, and C the *fifth*. In No. 5, the second triad is the *supertonic* of the key of G, of which A is the fundamental, C the *third* and E the *fifth*. The fifth triad is the *dominant*, of which D is the fundamental, F♯ the *third* and A the *fifth*.

TRIADS IN THE KEYS OF C AND G. Figure 2.



The octave of the fundamental may be added, and when so constructed the chord is generally called a *common chord* to distinguish it from the simple *triad*. With the seventh instead of the octave added the chord becomes a *seventh*. For instance, in No. 1, we have the *dominant* chord of C. And in No. 2, the *dominant seventh* chord of C.



The tonic, as the *keytone* of the scale is of the first importance. The tones of the scale which are next in importance are the *dominant* (*fifth degree*), and *subdominant* (*fourth degree*). The harmonies then of the *first, fourth* and *fifth degrees* are naturally significant and to these we will confine our discussion. As a thorough knowledge of chords in general, and particularly those altered or modified forms known as *diminished* and *augmented* can only be acquired by long and assiduous study, we refer the pupil whose ambition would lead him further, to any good work on harmony—preferably, "*Richter's Manual.*"

The same tones used to construct the major scale occur in the relative minor† (whence the term "*relative*"), but as the major and minor each establish a different tone as tonic, the triads based on certain degrees in the major scale would not have the same significance in the minor. For instance in Figure 3, it is shown that the triads of the greatest importance in the major scale are only secondary in the minor, and *vice versa*, and furthermore, the triads of the *first, fourth*

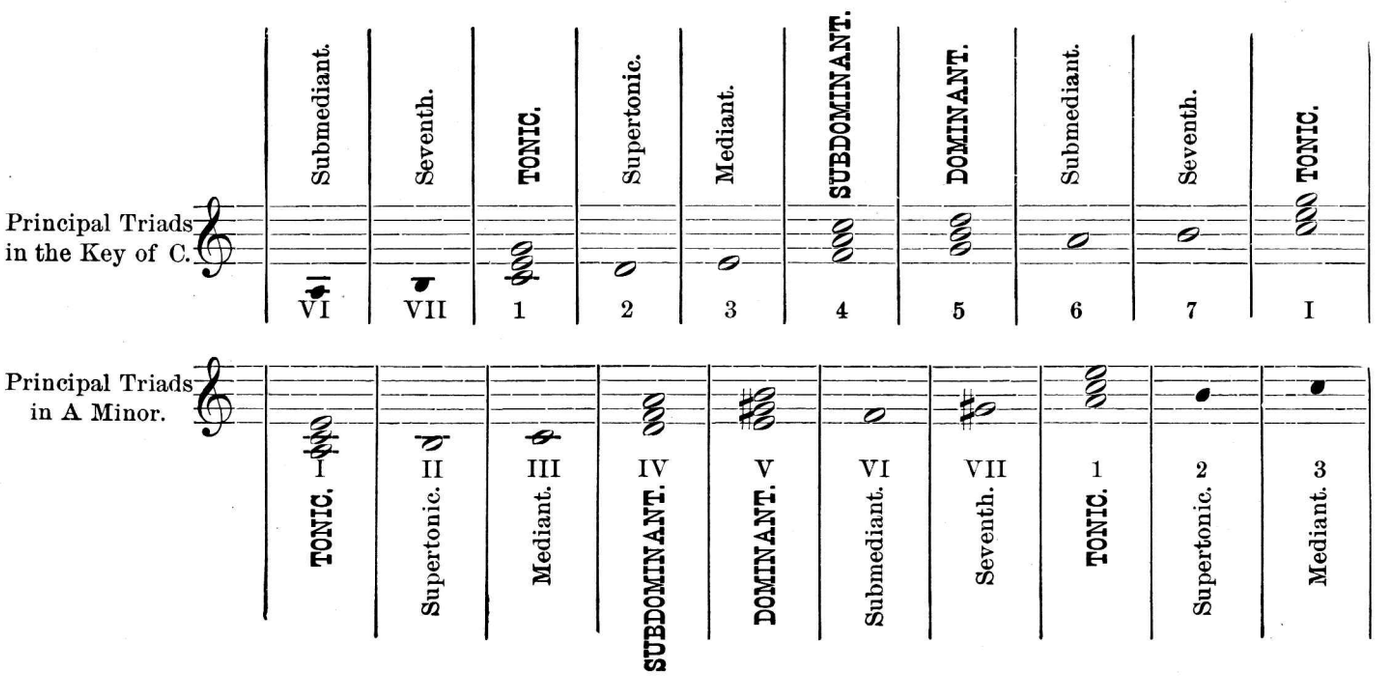
**When we say the "*third*" and "*fifth*" we refer to the intervals *above, not below*. This is implied—the word "above" is ambiguous. When the interval below is intended it is so expressed.

†*i.e.* In the *normal minor* scale. The *harmonic minor* scale, used for all harmonic purposes, has a *raised seventh* which of course is foreign to the major, and the *melodic minor scale*, used for the construction of melody has a *raised sixth* and *seventh* ascending and restored *sixth* and *seventh* descending.

and *fifth* degrees of the major scale are *major triads* and those on the *second, third* and *sixth* degrees *minor triads.*—(See: "Intervals.")

Hence, while the latter are found in the ordinary *major scale,* they form the principal harmonies of, and naturally belong to, the *minor.*

Figure 3.



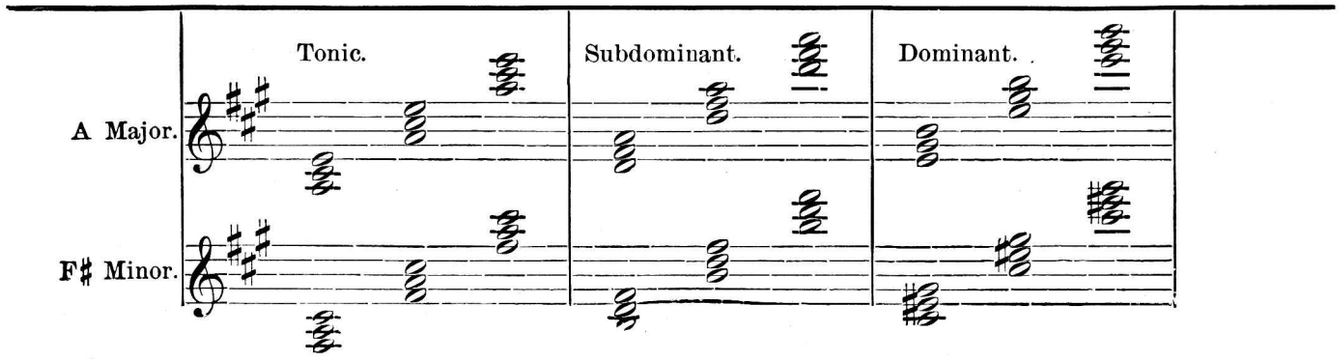
EXERCISES.

Write the *tonic, subdominant* and *dominant* triads of every key, minor and major.
Do not neglect the *raised seventh* in the minor.

These exercises need not be confined to the stave or to one octave, but should be written on the added lines both above and below, (See: Figure 6). Such a course should familiarize the pupil with the appearance of the chords and enable him to recognize them immediately when reading music.

A number of the triads given in the following figure can not be played upon the banjo, but this does not detract from the utility of writing the exercises as suggested. This will be explained hereafter.

Figure 6.



INTERVALS.

We distinguish in the interval two elements, DENOMINATION (*i.e., seconds, thirds, fourths*, etc., etc.,) and KIND (*minor* and *major*).

To determine whether the *triad* is *minor* or *major* we consider the kind of *third* only, the same kind of *fifth* being common to both. A *major* triad is composed of a *major third* and *major fifth*. A *minor* triad has a *major fifth* and *minor third*.

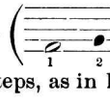
The triad on the *seventh degree* has both *minor third* and *minor fifth* and is called a *double minor* or *diminished triad*. The surest method by which to determine the nature of an interval is the "*half step formula.*" For example: In Figure 3, the interval is a *third* and the number of half-steps contained is *four*. *Four* is the formula of a *minor third*. In Figure 4, the interval is likewise a *third* but it contains *five half* steps and is therefore a *major third*. In Figure 6, it will be seen that the formula of a major *fourth* is *seven*, and in figure 7, it appears that the formula for a *minor fifth* is likewise *seven*, but this should not confuse the student if the proper course of procedure to determine the nature of an interval is resorted to. For instance, let us take the interval (Figure 6), and determine its *denomination* by counting the degrees—  and it becomes at once evident that the interval is a *fourth*, and then to decide as to *kind* count the half steps, as in Figure 6, and we find that it is a *major fourth*, 7 being the formula of a *major fourth* and 6 the formula of a *minor fourth*.

ILLUSTRATION OF THE HALF STEP FORMULA—WITH ONE EXAMPLE OF EACH INTERVAL.

FIG. 1.
Minor Second.
Formula: 2.

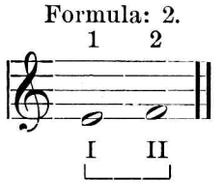


FIG. 2.
Major Second.
Formula: 3.

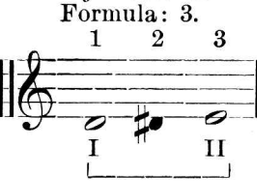



FIG. 3.
Minor Third.
Formula: 4.

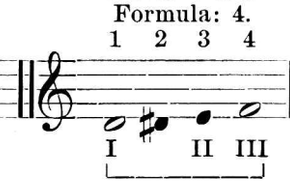



FIG. 4.
Major Third.
Formula: 5.

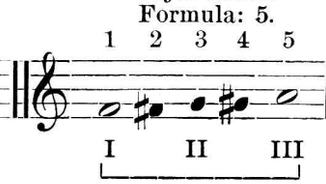



FIG. 5.
Minor Fourth.
Formula: 6.

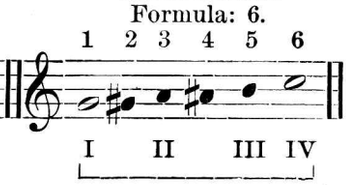



FIG. 6.
Major Fourth.
Formula: 7.

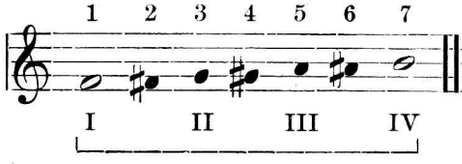



FIG. 7.
Minor Fifth.
Formula: 7.

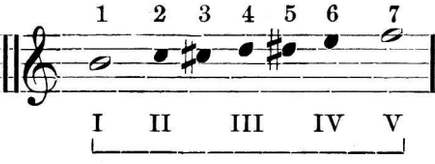



FIG. 8.
Major Fifth.
Formula: 8.

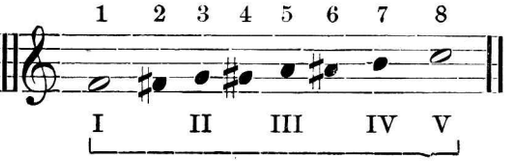



FIG. 9.
Minor Sixth.
Formula: 9.

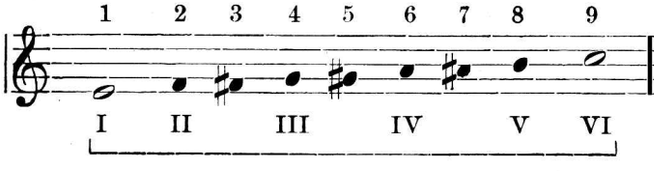



FIG. 10.
Major Sixth.
Formula: 10.

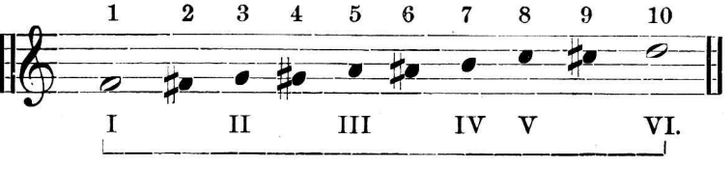



FIG. 11.
Minor Seventh.
Formula: 11.

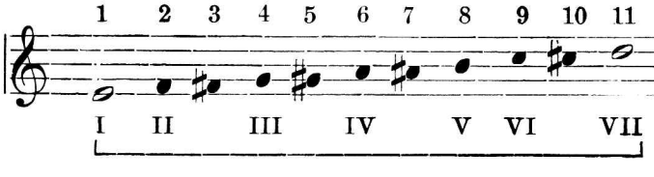
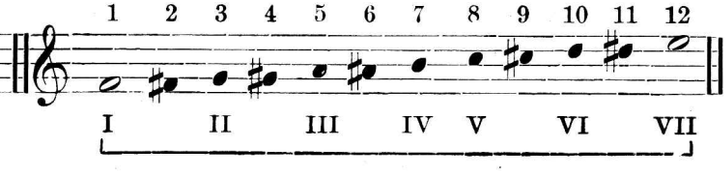



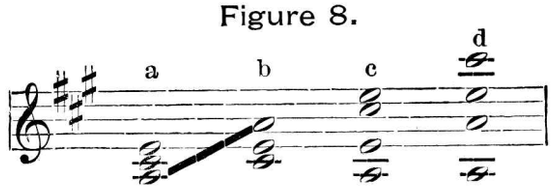
FIG. 12.
Major Seventh.
Formula: 12.

Thus far we have dealt exclusively with the *evolution* of the chord. This is the first and all-important step and must be thoroughly understood before attempting the further development and treatment termed.

INVERSION AND DISPERSEMENT.

This branch of the subject will be treated in a more general way and discussed just so far as is necessary, to form the connecting link between the ground already covered, and the Arpeggio formulas which follow. A chord is said to be *inverted* when, as the word implies, the order of its tones is changed; and *dispersed*, when the tones are "scattered," so to speak.

In Fig. 8, the tonic chord of A is shown at *a* in its original form, at *b* it is *inverted*, and at *c* and *d* *dispersed*.

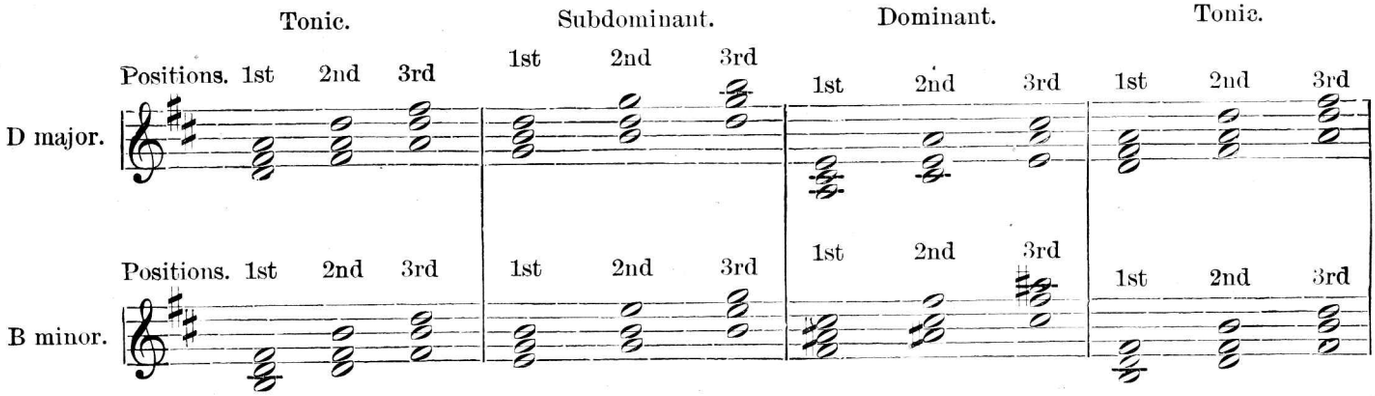
Figure 8.



There are a number of possible *dispersements*, but only *three* so-called *positions* of the *common chord*, and *four positions* of a *seventh*. The *common chord* has but *three different tones*, and the *seventh, four*, whence the difference in the number of positions obtainable.

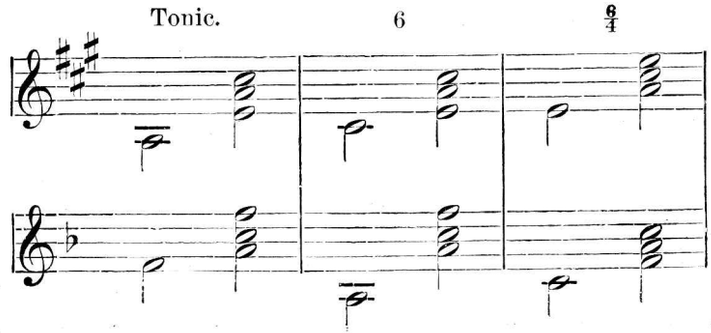
Figure 9.

SHOWING THE THREE POSITIONS OF THE COMMON CHORD.



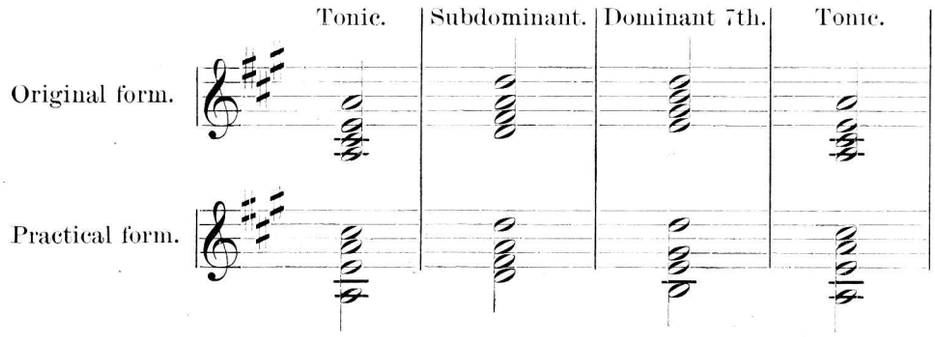
Any one of the tones of a chord may be duplicated without materially affecting the nature of the harmony or substituted for the fundamental in the bass. When other than the fundamental is taken for a bass, the chord assumes a slightly different phase and takes another name signifying its character. For instance, with the *third* as bass, the chord is called a *chord of the sixth* (6), and with the *fifth* in the bass, a *chord of the sixth-fourth* ($\frac{6}{4}$). See Figure 10.

Figure 10.



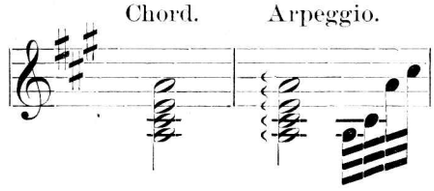
It will be seen that the chords generally employed in playing banjo accompaniments seldom embrace the attendant harmonies in their original positions. There are two reasons for this: Some of the chords can not be played on the banjo, and others are more effective when inverted. One example will suffice to illustrate this. See Figure 11.

Figure 11.



Having mentioned them in passing, we will now dismiss from our minds the *chord of the sixth* and the *chord of the sixth-four* (referring as we do so to the suggestion of a deeper study, on Page 24) and adhere strictly to the *three positions* of the *attendant harmonies.*

The difference between a chord and an arpeggio being, that the former is a *simultaneous* sound of several tones, and the latter a collection of tones played *successively*, a combination of tones that could not be played upon the banjo when written as a chord can be produced in arpeggio form—for example:

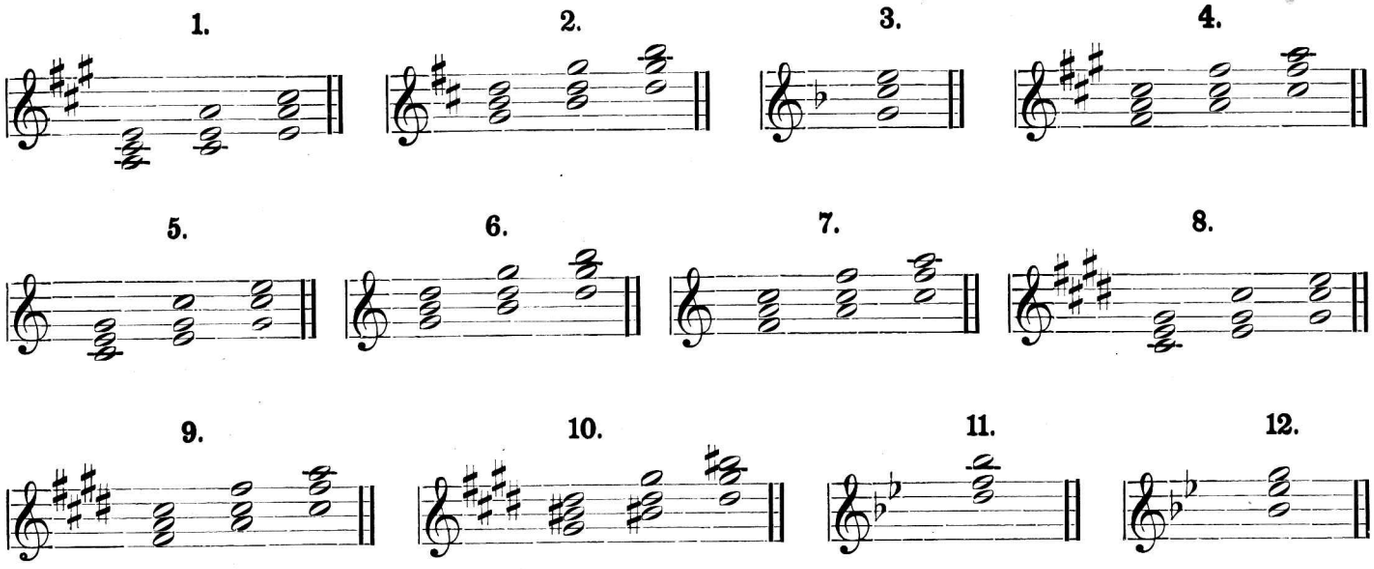


The above is an illustration of a very simple arpeggio. The advanced arpeggio exercises which follow are merely a combination of the three positions of the chord played consecutively in arpeggio form. A little practice in both writing and playing the three positions alluded to, should precede the exercises proper.

Work out the following exercises and compare results with the solutions given below.

1. Write the 1st, 2nd, and 3rd positions of the Tonic of A.
2. Write the 1st, 2nd, and 3rd positions of the Subdominant of D.
3. Play the 3rd position of the Dominant of F.
4. Play the 1st, 2nd, and 3rd positions of the Tonic of F♯ minor.
5. Write the three positions of the Tonic of C;
6. of the Dominant;
7. of the Subdominant.
8. Write the three positions of the tonic chord of C♯ minor;
9. of the Subdominant;
10. of the Dominant.
11. Play the second position of the Tonic of B♭.
12. Play the the third position of the Subdominant of B♭.

Do not limit the practice to the few examples given but continue writing in the different keys until the theory becomes thoroughly clear to the mind.

EXAMPLES WORKED OUT.

The author meets so many "advanced" pupils who read the higher notes laboriously, that he deems no apology necessary for inserting here, an aid in the form of a little mathematical scheme that should enable them to remedy this shortcoming and place them upon a better footing to follow us through the arpeggios.

We know that the seventh fret on the bass string forms a unison with the third string open: the fourth fret on the third string produces a unison with the second string open: and the third fret on the second string produces a unison with the first string open.

This shows that the third string is *seven* frets higher in pitch than the bass; the second, *four* frets higher than the third, and the first string *three* frets higher than the second. Carrying the computation further—the first string is *seven* frets higher than the third, and *fourteen* frets higher than the bass,—(the sum of the difference between each string.)

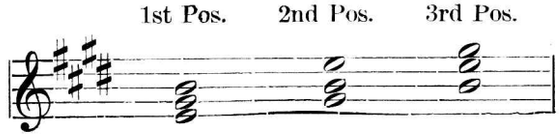
Therefore if given a note on the third string and asked to locate the same tone on the bass, add *seven* frets. For instance: G natural is found on the third fret on the third string. To find G on the bass add seven,—G will be found at the tenth fret on the bass. C♯ is found at the second fret on the first string; the following shows how quickly it can be located on each of the other strings. 1st string, 2nd fret C♯; 2nd string, (2 + 3 =) 5th fret C♯; 3rd string, (2 + 7 =) 9th fret C♯; 4th string, (2 + 14 =) 16th fret C♯.

To locate the notes by this method it is only necessary to remember three figures, viz.: 3, 4 and 7, denoting the difference between the strings and apply the system by mental arithmetic.

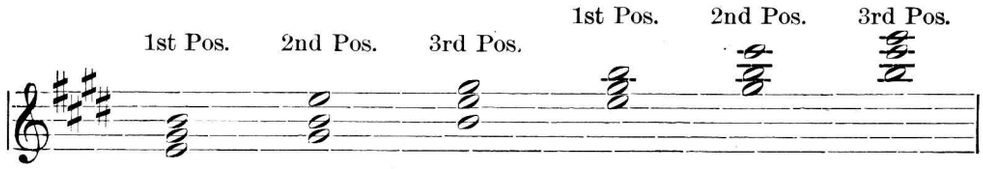
The student should practice locating the notes in this way until thoroughly familiar with the system. For example: play B on the first string (open), then on the second string (3rd fret); on the third, (7th fret); and on the fourth, (14th fret) in succession.

Then take another note on the first string and, skipping the second, find the same tone on the third string—(add *seven* the sum of the difference between the first, second and third strings), etc., etc.

As in the *Scales*, that of E is taken as the basis of formula No. 1, so in *Arpeggios*, E is again used to illustrate the theory. We know that the three positions of the chord of E are—



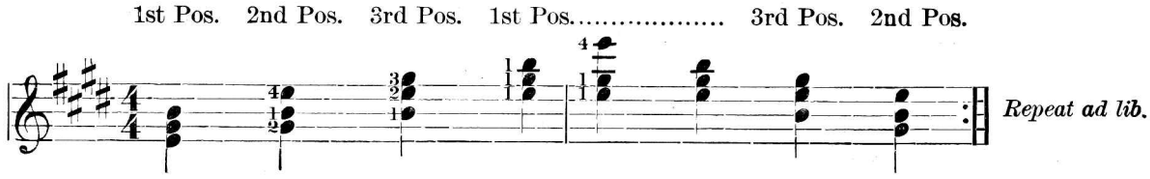
And that, as change of octave in no way affects them, the following chords are simply the same positions in two octaves:



but as the effect would not be good should we end the ascending arpeggio on other than the fundamental tone of the chord, the highest position expedient in this key is the first position in the higher octave given.

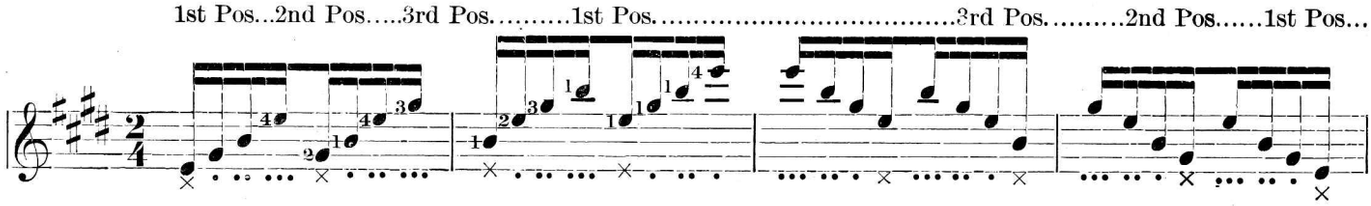
Play the following exercise until the changes can be rapidly effected with the left hand, before attempting the arpeggio which follows. It is advisable to practice the positions of every arpeggio in this manner.

Bear in mind that *the term "position" applies to the chord—not to the fingerboard.*

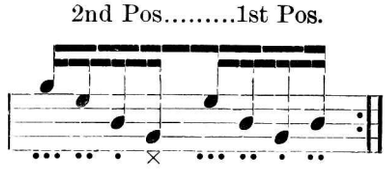
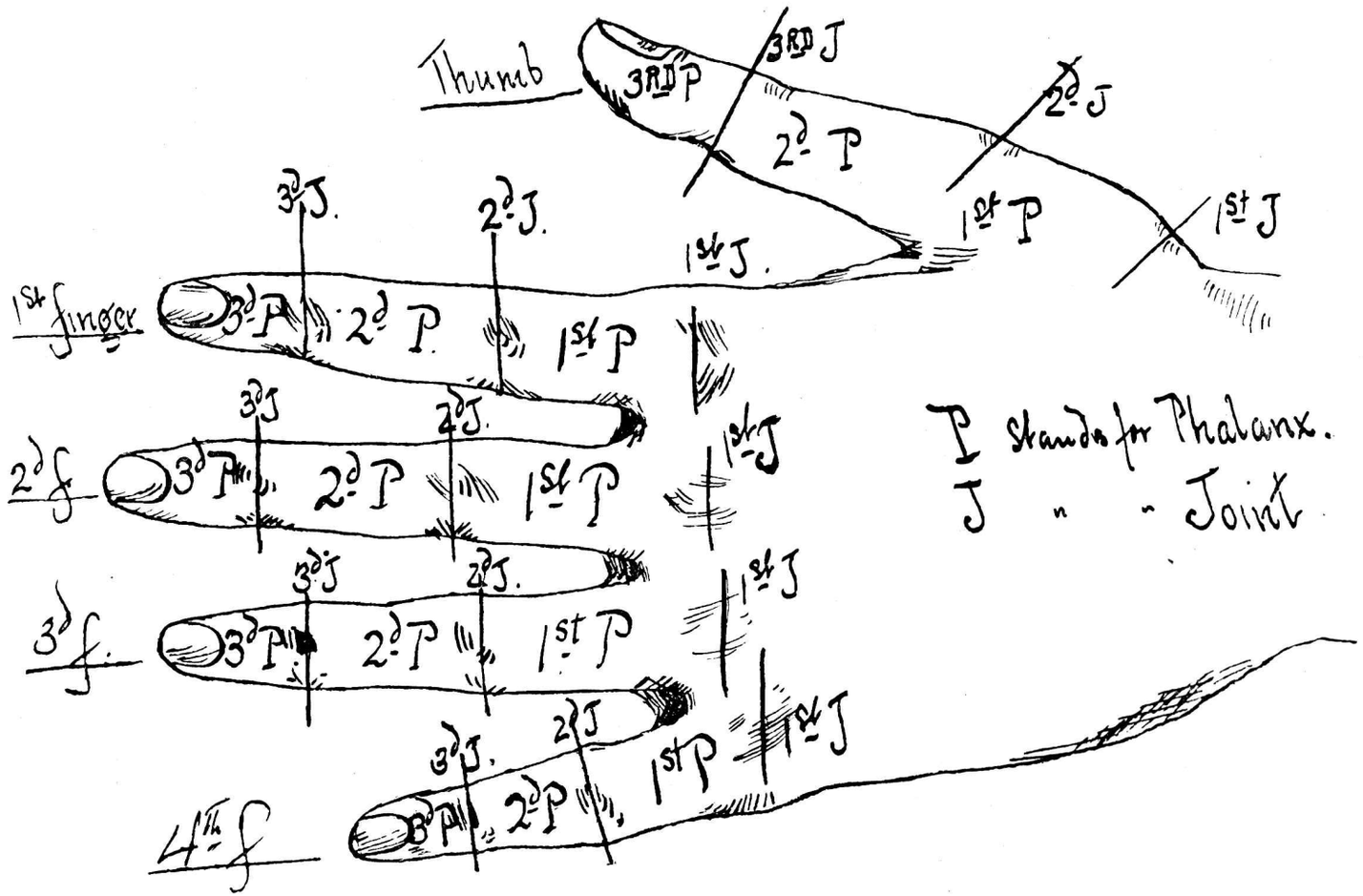
Figure 12.

ARPEGGIO EXERCISE IN E.

Arpeggio exercises are played with three fingers and thumb with the *wrist support only.*

Figure 13.

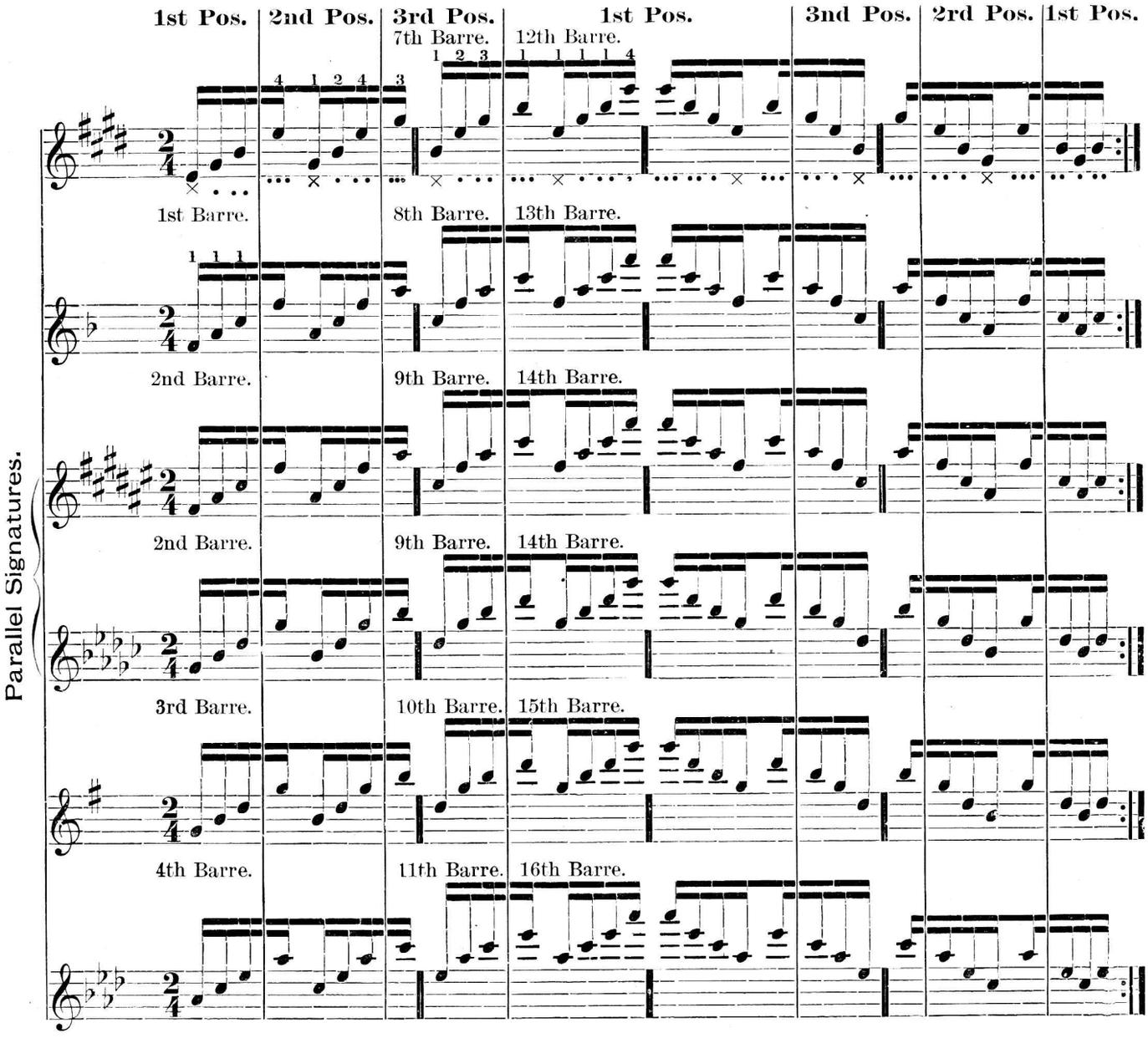


The last measure of Figure 13 may be played as shown in Figure 14, this obviates playing two E's in succession when repeating the exercise and makes a better effect.

Figure 14.


Thumb
3RD P
3RD J
2d P
2d J
1st P
1st J
1st finger
3d P
2d P
1st P
3d J.
2d J.
1st J.
2d f
3d P
2d P
1st P
3d J
2d J.
1st J
3d f.
3d P
2d P
1st P
3d J
2d J.
1st J
4th f
3d P
2d P
1st P
3d J.
2d J
1st J
P Stands for Phalanx.
J " " Joint

MAJOR ARPEGGIO FORMULA, No. 1.

It is only necessary to give the fingering of one arpeggio. The same fingering is used throughout.



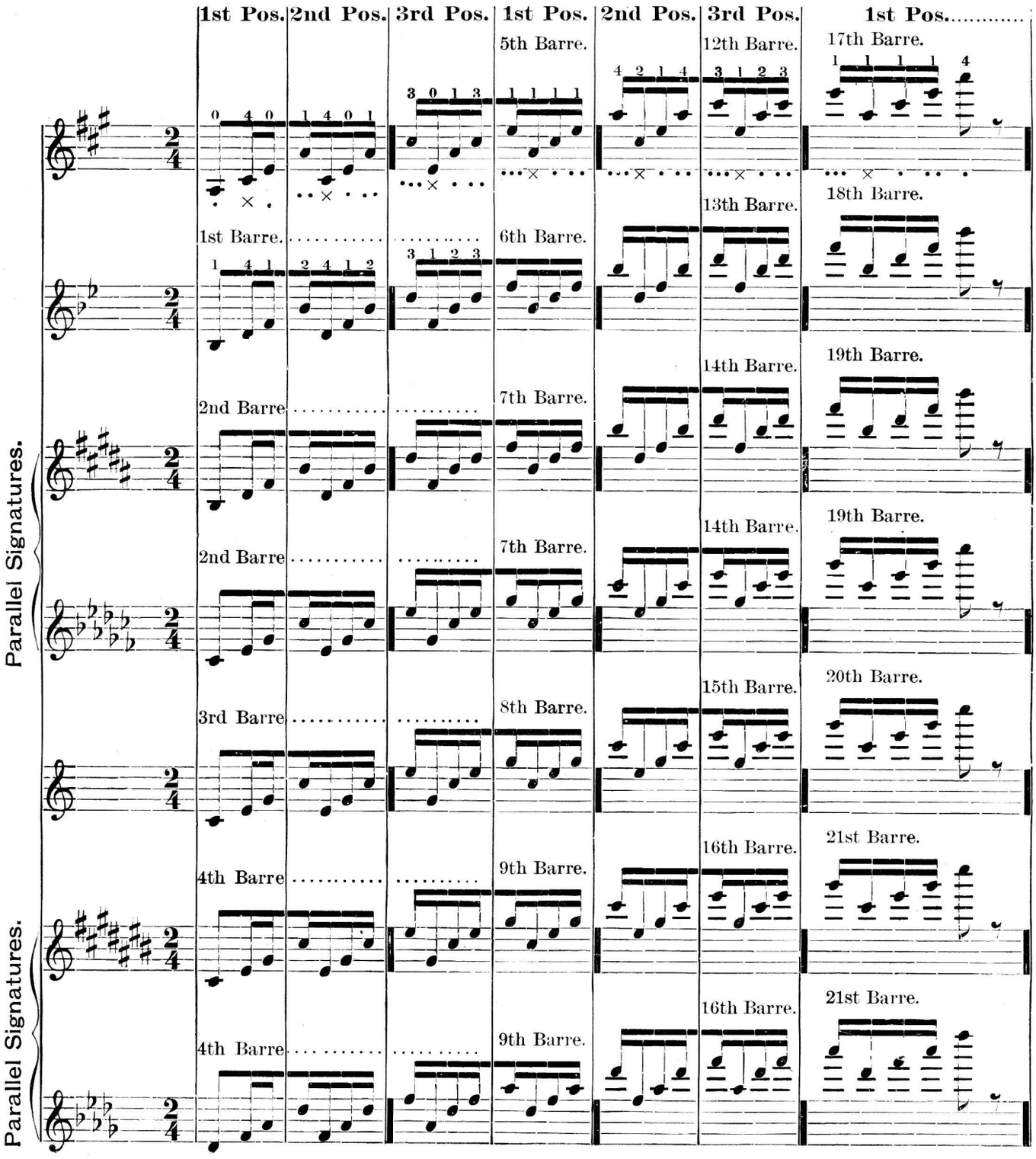
As these exercises are to be repeated *ad lib.,* the last measure is given as explained in Figure 14.

Major Arpeggio Formula No. 2, is more difficult than the others and at first glance may appear impracticable. However, the author has taught many, many pupils to play all of these exercises with the greatest celerity, and as a matter of fact, with the exception of the highest position given, the chords are very easily read and played. The highest position is simply a barré fretted with the first finger with an easy reach to the last note for the little finger.

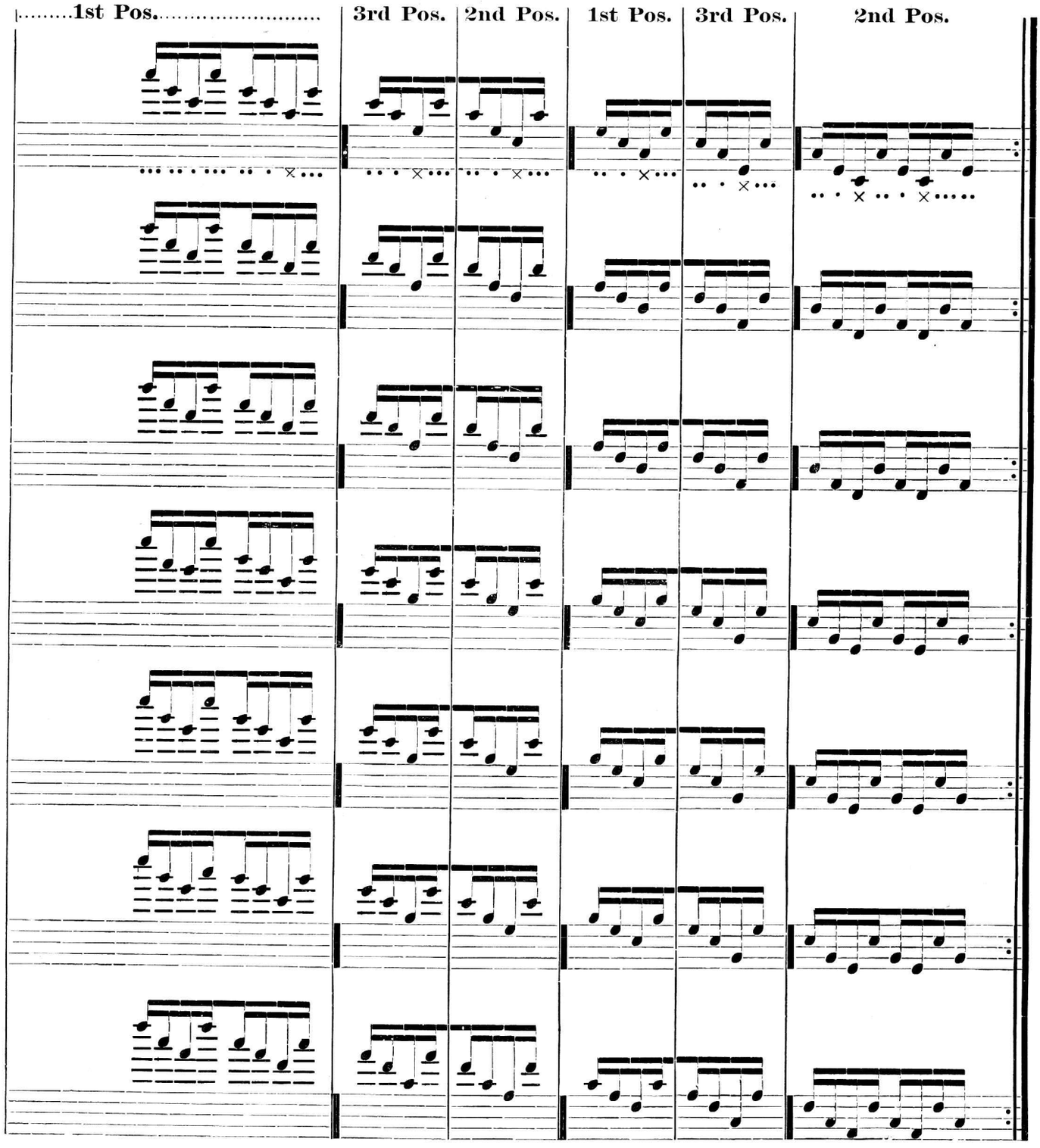
In the higher keys the thumb may be moved from the ordinary position as suggested on page 17. And if the arpeggios in C, C♯ and D♭, can not be mastered at once, omit them for the present and practice the others.

The difficulty of reading notes so far above the stave will prove no handicap, as the simplicity of the highest position makes it possible to commit to memory with one reading.

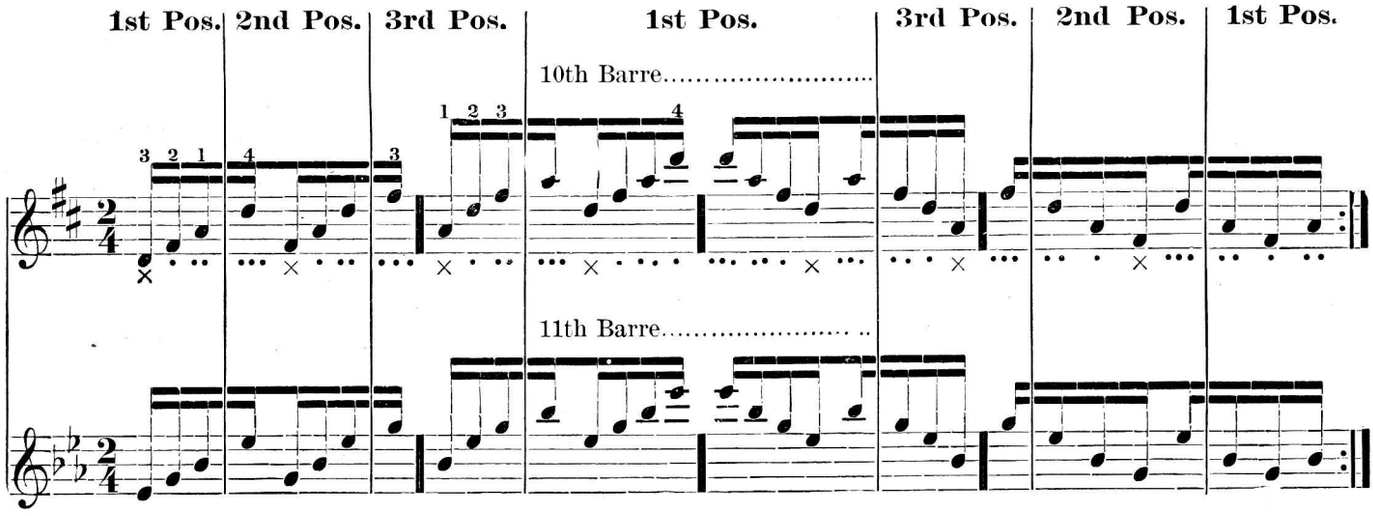
MAJOR ARPEGGIO FORMULA, No. 2.



MAJOR ARPEGGIO FORMULA, No. 2.—Concluded.



MAJOR FORMULA, No. 3.



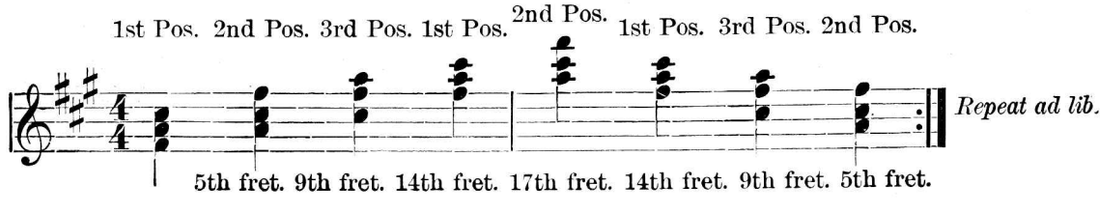
There are three major, and three minor arpeggio formulas, corresponding, in the order of their arrangement of the keys, with the scale formulas.

The right hand fingering is practically the same throughout, but the difference in formation between the minor and major chords naturally entails a difference in the left hand fingering.

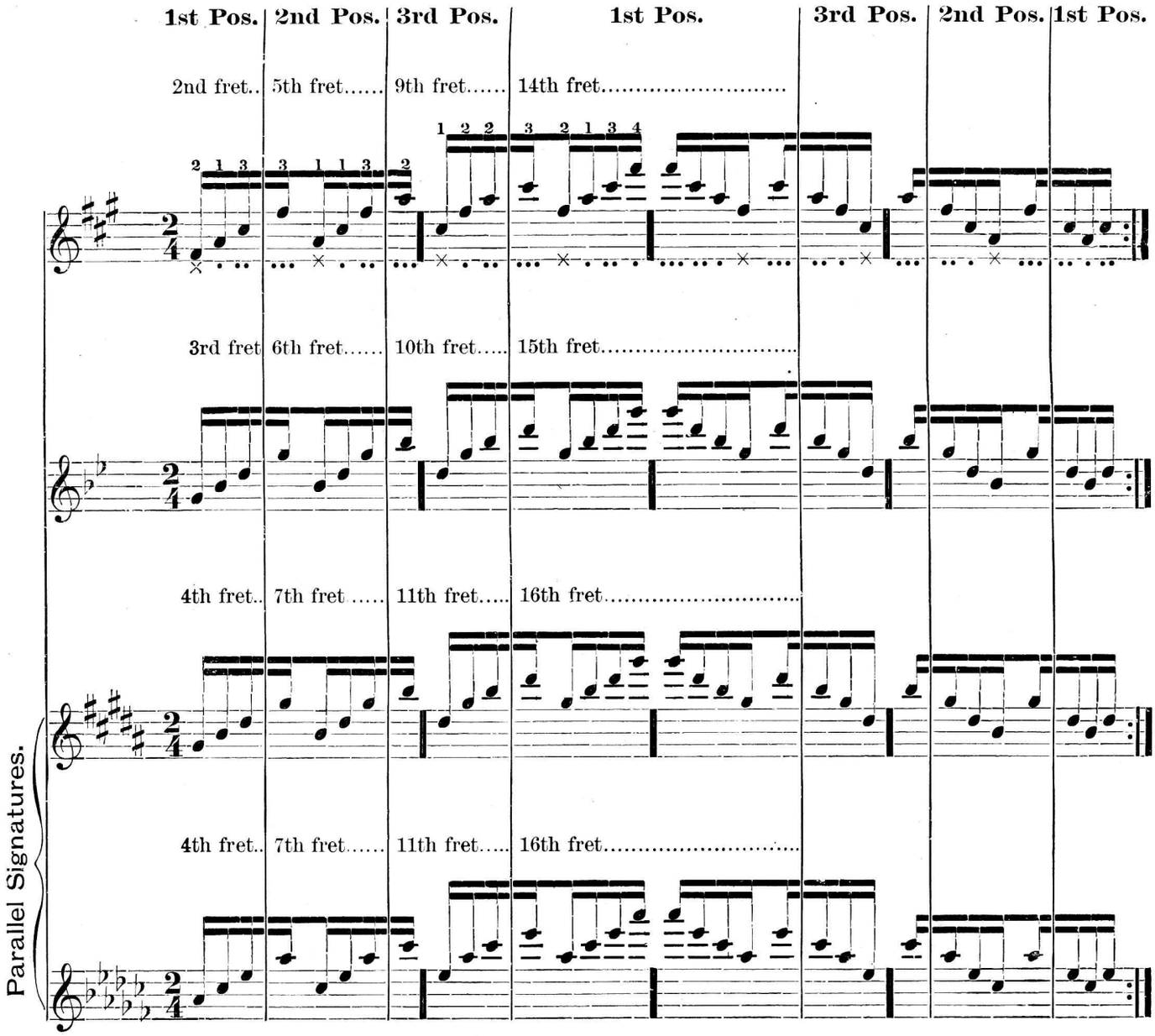
In "Scales" we had the *melodic* minor scale, but in "Arpeggios" we have the *harmonic* form, (raised *7th* both ascending and descending) which is always used for harmonic purposes.

In the major arpeggio formulas the term "barre" is used as a guide to the location of the chords on the fingerboard; but as the minor chords seldom appear in so called "barre" form, and as it is necessary to employ some term in lieu of "barre" or "position," which latter has been adopted for other purposes (see foot of page 23,) we will accept the word "fret" in this instance as a synonym for "position."

Chords in the arpeggio of F♯ minor— the model of minor arpeggio formula, No. 1, to be practised as before suggested.

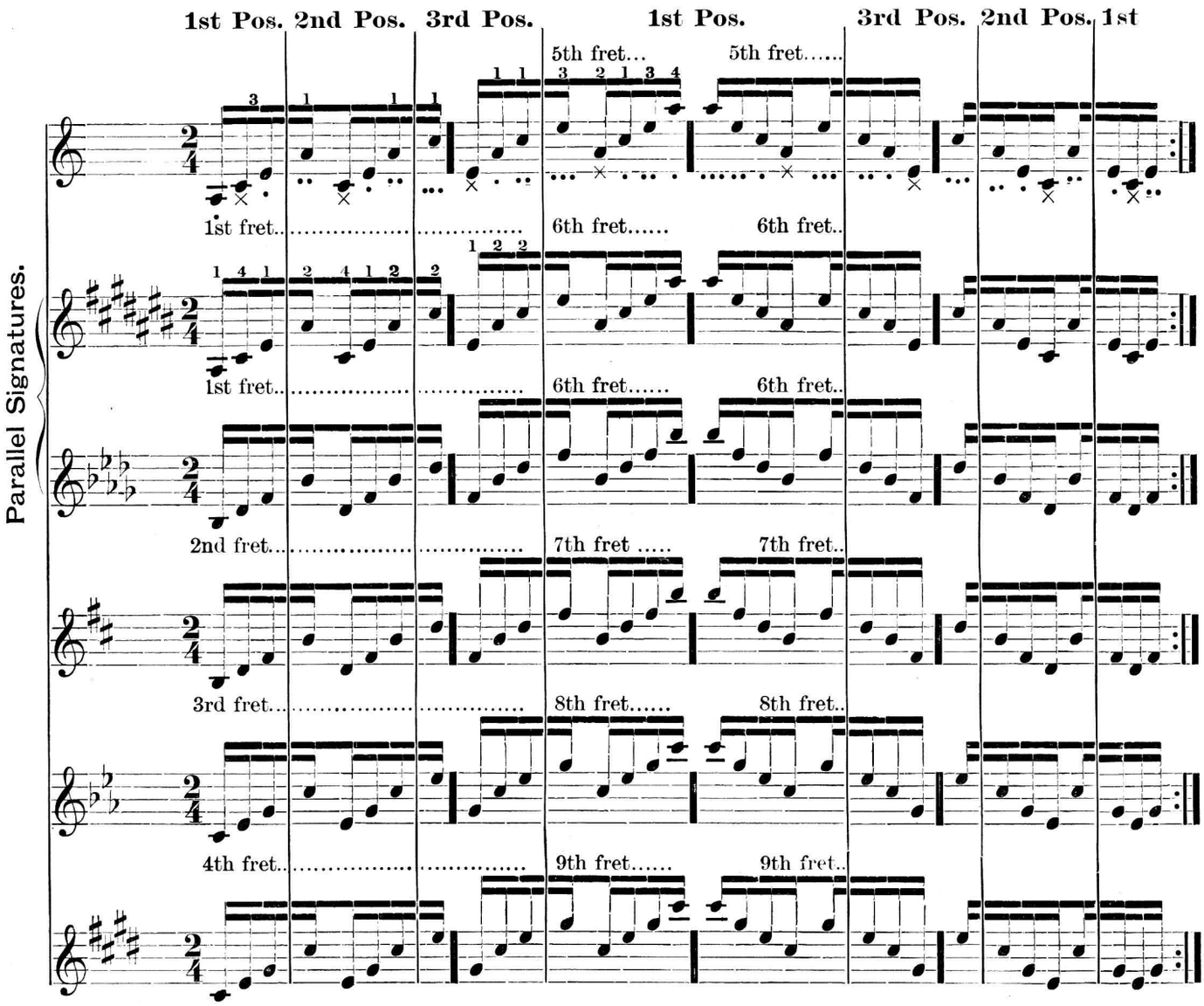

1st Pos. 2nd Pos. 3rd Pos. 1st Pos. 2nd Pos. 1st Pos. 3rd Pos. 2nd Pos.
Repeat ad lib.
5th fret. 9th fret. 14th fret. 17th fret. 14th fret. 9th fret. 5th fret.

MINOR ARPEGGIO FORMULA, No. 1.



In playing the arpeggios in the above formula on a small instrument the highest position may be retained while reaching the highest note. If a large instrument is used another shift becomes necessary.

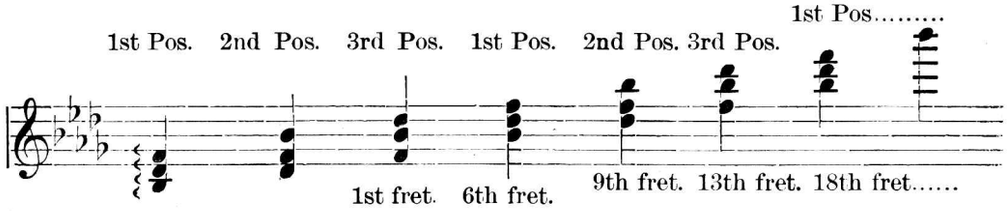
MINOR ARPEGGIO FORMULA, No. 2.


1st Pos. 2nd Pos. 3rd Pos. 1st Pos. 3rd Pos. 2nd Pos. 1st
Parallel Signatures.
5th fret... 5th fret.....
1st fret..... 6th fret..... 6th fret..
1st fret..... 6th fret..... 6th fret..
2nd fret..... 7th fret ..... 7th fret..
3rd fret..... 8th fret..... 8th fret..
4th fret..... 9th fret..... 9th fret..

C♯ minor can also be played according to Formula, No. 3, which will simply change the position of the first and last *fretted position.*

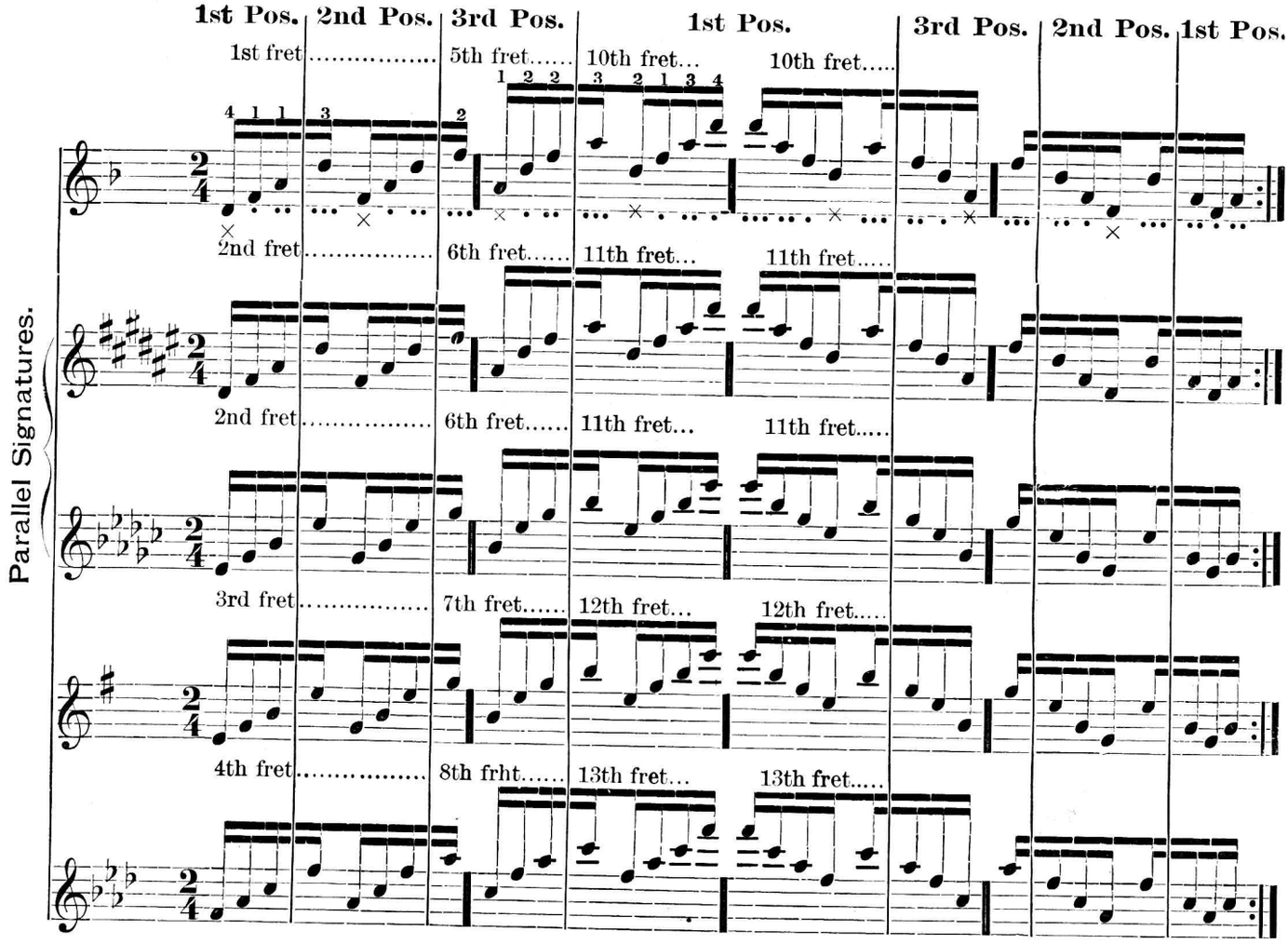
The arpeggios in formula, No. 2, can be carried an octave higher. It is only necessary to remember that the octave of any chord may be found by retaining the same relative position of the fingers and shifting the hand twelve frets above. For instance; the first position of the tonic of B♭ minor is found at the 1st fret, and again at the 13th fret.

Then to continue the arpeggio exercise of B♭ minor an octave higher than given in the formula the chords would be:—



And to make the rhythm correct, the plan of major formula, No. 2, should be taken as a model.

MINOR ARPEGGIO FORMULA, No. 3.



In major formula, No. 2, and minor formula, No. 2, the first three positions of the chord are played in one *fretted position* by simply fretting one additional note on the bass string.

In the minor formulas this additional note (the *third* of the chord) may be reached with the little finger of the left hand while the first finger retains the barre, but in the major arpeggios (and more especially those of B and B♭) the first two notes should be played before the barre is fretted. The final ending of each arpeggio, major and minor, should be the same as the first measure *reversed.* It should be understood that the last three notes of the arpeggio, as shown in the formula maps, (and explained on page 30,) are introduced solely for effect when repeating.

Having mastered the formulas the pupil should also learn to play the arpeggios of A and E major, and A and C♯ minor with the E ( ) on the *fifth string.* In the latter form omit taking the chord at the *fifth fret* with the left hand and of course alter the right hand fingering accordingly.

The most interesting way to practice arpeggios is to play the tonic, subdominant, dominant and return to the tonic arpeggio of each key. Of course it is necessary to thoroughly learn all the formulas before attempting to do this.

EXAMPLE.—Play the arpeggio of E. (Formula 1.) Then the subdominant of E, which is A, (Formula 2,) following this with the dominant of E, which is B, (Formula 2,) and finish with the tonic E.

IN CONCLUSION.—Do not try to learn more than one formula at a time, and be sure that the scales are thoroughly mastered before attempting the arpeggios. This work, short as it is, will provide ample study for one long year. "Rome was not built in a day," and it is folly to attempt to learn the banjo thoroughly in less time than one would expect to master the violin. So be content to progress *slowly* but *surely*, devote more time to work, less to play, and the result will surely recompense you.

THE AUTHOR.

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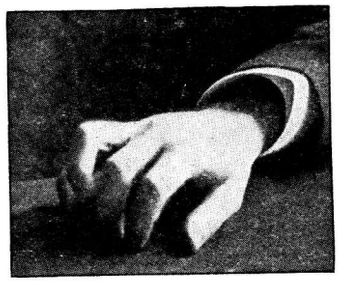
AN OPERATION FOR IMPROVING THE FLEXIBILITY OF THE THIRD FINGER.

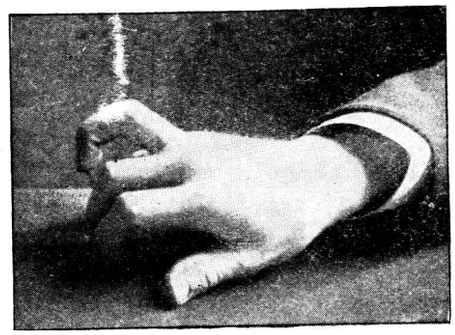
MR. GEORGE W. GREGORY, of New York, writes that the operation performed upon his hand some weeks ago, has proved a complete success, and the result is, that he can now use the third finger of his right hand with greater facility than ever before; and, in fact, as freely as any other finger. With the letter, we received two photographs (which we reproduce) one taken before, and the other after the operation, showing the increased mobility of the finger in question, the latter being flexed to the greatest possible extent in each picture.



BEFORE OPERATION.

In 1890, Mr. Gregory, through excessive practice, brought on what is termed musicians' paralysis. Affecting the second finger to such a degree, that manipulation of the strings with that member, became, not only painful, but laborious, and to such an extent that its use proved impracticable and finally had to be abandoned, except in the playing of chords or very simple arpeggio movements. A peculiar feature of this condition was, that while it incapacitated the finger for hard work on the banjo, there was no apparent injury to the muscles; the finger retained its strength for all other purposes, and there was no diminution of facility at the piano. This established the fact, that the seat of the trouble lay in the nerves controlling the action of certain muscles. The best authorities on the subject of this peculiar ailment were consulted and a treatment of massage and electricity was prescribed and administered for some six weeks, resulting in the partial recovery of the use of the finger in playing.

The restoration was not permanent, however, and in the course of a few months, although great



AFTER OPERATION.

care had been taken not to overwork the finger, the trouble returned and the treatment had to be repeated. This occurred again and again, until finally, about two years ago, it became advisable to train the third finger to take the place of the second. Then another difficulty arose; all movements played with the little finger resting upon the head of the banjo, were very awkward to manipulate, because the little ligaments connecting the cords of the third with those of the fourth finger, do not permit the former to be flexed to any great extent without carrying the latter with it.

Of course, years of training will very much extend the limit to which these fingers can be separated, but there is an easier and in the end, more satisfactory way of accomplishing the same result, and that is by an operation in surgery, called *tenotomy*.

This operation simply consists of cutting the small transverse muscles which bind the third finger to the second and fourth, and does not in any way affect the strength of the hand.

Mr. Gregory sought out Dr. C. Dana Hubbard, who has performed the same operation for a great many pianists, and had these muscles separated with the aforementioned result. The operation was not painful; took but ten minutes and the wound had entirely healed in four days. Mr. Gregory played in concert the fifth day after it had been performed.

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